

CIO

BUSINESS TECHNOLOGY LEADERSHIP

I.T. ON GEORGIA'S MIND

Can a geek governor transform a state?

Page 66

REAL COLLABORATION

It's easy to talk the talk; walking the walk is hard—and rare. How to do it right.

Page 72

THE GLOBAL STATE OF INFORMATION SECURITY

By Scott Berinato

The Good

82% of you employ a CSO, CISO or CPO

93% have deployed firewalls

72% encrypt data

The Bad

69% do not keep an accurate inventory of user data

33% of all enterprises are NOT in compliance with Sarbox, HIPAA or state privacy laws

The Ugly

40% of you don't know how many security incidents you've experienced

45% don't know what type of attacks have occurred

Exclusive Research
Begins on Page 50



**LEADER
OF THE
QUAD-CORE
PACK.**





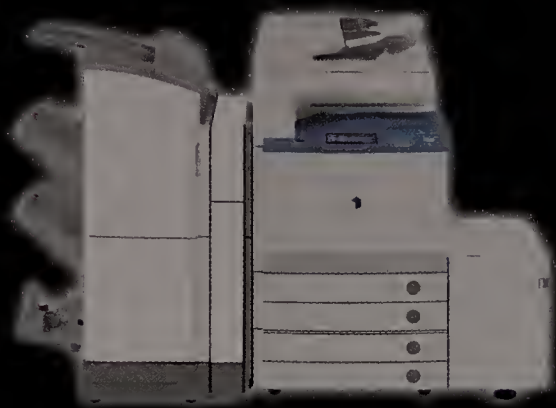


Maximize performance and responsiveness with the complete line of Quad-Core Intel® Xeon® processors for mainstream servers. Learn more at intel.com/xeon





**IN THE WORLD OF OFFICE COLOR,
SPEED AND QUALITY SHOULDN'T BE LIMITED.
EVEN IF MY BUDGET IS.**



**THE CANON COLOR IMAGERUNNER
PRODUCE. PERSUADE. PERFORM. ON PAPER.**

**Color
imagerUNNER®**

www.usa.canon.com 1-800-OK-CANON

Canon and IMAGERUNNER are registered trademarks of Canon Inc. in the United States and may also be registered trademarks or trademarks in other countries. IMAGEANYWARE is a trademark of Canon. © 2007 Canon U.S.A., Inc. All rights reserved. Product shown with optional accessories.

Canon
*image*ANYWARE

PUT MORE THAN JUST TIME ON YOUR SIDE

When you have a hardware or software need at the last hour, you can rely on Insight. But you can also count on us for your complete, long-term systems solutions—from planning and design to implementation. **Gain a trusted advisor. Gain Insight.**



HP dx2300 Microtower

RT843UT#ABA



- Intel Pentium 4 3.2 GHz processor
- DVD RW (R DL); Ethernet, Fast Ethernet
- Microsoft Windows XP Professional
- 1-year warranty



HP L1906 - Flat Panel Display

PX850A8#ABA



- Max resolution 1280 x 1024
- Dot pitch/pixel pitch 0.294 mm
- 3-year warranty



HP Storage Works Backup System

EH880A#ABA



- 1TB Raw capacity
- 750GB usable capacity
- 3.5" 250GB SATA
- 40MB/s performance

Insight.
Technology
Solutions

insight.com ▼ 800.927.3209

Source Code AD069

© 2007 Insight Direct USA, Inc. All rights reserved. Insight is a registered trademark of Insight Direct USA, Inc. All other company and product names are trademarks or service marks of their respective owners. For all prices and products, we reserve the right to make adjustments due to errors, changing market conditions, product discontinuations or typographical errors.

contents

SEPTEMBER 15, 2007 | VOL/20 | NO/23

Columns

34 | How to Make Nice

EXECUTIVE COACH Tips for winning back estranged colleagues. **By Susan Cramm**

38 | Motivational Strategies

PEER TO PEER To develop a team that can compete in the future, you have to help its members define a role for themselves, and then give them the tools to get there.

By John E. West

42 | The Architected Business

APPLIED INSIGHT Before you can deploy a service-oriented architecture, you have to understand your business model. For CIOs, the stakes have never been higher.

By Charlie Feld

46 | Failure to Communicate

THINK TANK Understanding how the brain processes social cues can help you improve how you and your colleagues collaborate online. **By Daniel Goleman and Clay Shirky**

more »

50 | The End of Innocence

COVER STORY | GLOBAL INFORMATION SECURITY Five years ago, when CIO and PricewaterhouseCoopers collaborated on the first "Global State of Information Security" survey, very few people knew how bad the problem was. Now everyone knows. But that doesn't mean anyone knows how to fix it. **By Scott Berinato**

66 | Georgia IT on His Mind

VIEW FROM THE TOP As a small business owner, Georgia Gov. Sonny Perdue was an early adopter. But he won't deploy the latest technology for his state just because it's cool. It's got to work for his constituents. **By Stephanie Overby**

72 | The Collaboration Gap—And How to Bridge It

COLLABORATION Everyone admits that collaboration for innovation is good. It's also rare. But when it works, it's beautiful. **By C.G. Lynch**

Georgia Gov. **Sonny Perdue** says technology is the key to creating a state government that is customer-friendly and results-driven.

66



contents (Cont.)

In Every Issue

8 | From the Editor

The power of staying in the moment.
Now put away that BlackBerry.
By Abbie Lundberg

10 | From the CEO

Is R&D a core competency you have to own? Not if it costs too much and bogs you down. By Michael Friedenber

15 | Board of Advisers '07

19 | Trendlines

- ▶ IT five years after Sarbox
- ▶ Wikia throws Google a curve
- ▶ Wanted: More ROI on innovation
- ▶ Boom time for hackers
- ▶ Deadline looms for Beijing Olympics
- ▶ Former Gillette CEO shares keys to success
- ▶ Supply chain's missing link

27 | Essential Technology

Virtualization can help speed backup and disaster recovery, plus trim costs. But you'll have to rethink storage management. By Galen Gruman

78 | Forum

The CIO Executive Council discusses collaboration via social networking.
By Carrie Mathews

82 | Index

84 | Five Things I've Learned

Harvard Business Professor John Kotter on leadership and change.



CIO Online

cio.com

[INFORMATION SECURITY]

Security Central

After you study the latest findings of **CIO's annual information security survey**, check out CIO.com for links to past years' surveys—including tips on how IT executives can manage risks effectively. And find more coverage of security, business continuity and risk management news and issues.

» For past survey stories, see www.cio.com/article/133600

» For more security coverage, see www.cio.com/topic/1481

[INNOVATION]

WHEN I.T. IS FRIEND, NOT FOE

A lack of IT agility can stop business growth—but so can business leaders who fail to see IT as a strategic partner. Read **The Role of IT in Innovation: Friend or Foe?** on CIO.com to learn how you can avoid typical pitfalls and see your way to a collaborative, innovative environment.

www.cio.com/article/131600

[VIDEO RÉSUMÉS]

SHOULD YOU JOIN GENERATION YOUTUBE?

Creative job-seekers are starting to send video résumés to prospective employers. Read our story on CIO.com to understand the trend and read our tips for creating a video résumé that works.

www.cio.com/article/132750



[CAREERS]

A CIO'S JOB HUNT

Read Mark Cummuta's **CIO Job Search: A Real Life Chronicle**, and glean tips on networking, interviewing and evaluating opportunities.

advice.cio.com/blog/mark_cummuta

Right
now @
CIO.
com

- » **Feature** Eight of the worst corporate spreadsheet blunders
- » **Information Collective** Alberto Gonzales, a case study in failed leadership
- » **Advice & Opinion** What five books should everyone read?
- » **Movers & Shakers** New CIOs at Qantas Airways and bookseller Borders



BREAK THE CYCLE. The HP BladeSystem c-Class, featuring efficient Dual-Core AMD Opteron™ processors, helps free I.T. from the cycle of server management. It's equipped with HP's exclusive Thermal Logic Technology, which can save companies over 40%¹ on power costs by managing the balance of power and cooling without sacrificing performance. And HP Thermal Assessment Services can customize a plan to help you determine optimal cooling and thermal levels and reduce energy costs—so your budget is spent on things that really drive your business.



Download an IDC White Paper on Power and Cooling Services

Call 1-866-625-3901

Visit www.hp.com/go/breakthecycle31

Set I.T. Free



FROM THE EDITOR

Be Here Now

This simple dictum has power beyond the obvious



On a recent trip to the West Coast, I visited with PG&E CIO Patricia Lawicki at her company's headquarters in San Francisco. PG&E emerged from bankruptcy protection a few years ago with an almost completely new executive team and a major transformation effort ahead of it. The new CEO, Peter Darbee, began the turnaround with a culture change. According to Lawicki, company directors and their direct reports went through weeks of facilitated sessions to both define a set of values everyone would live by as

well as to map out how those values would be demonstrated in the daily life of the company. The values include acting with integrity, communicating openly and honestly, respecting each other, meeting customer and shareholder needs, and being accountable. The values are supported by a set of dictums and concepts to help bring them to life.

One that I found personally relevant is "Be here now." Borrowed from the title of a 1971 book on spirituality by Ram Dass (or an album by the rock band Oasis, depending on your orientation), the idea is that whatever you are currently spending your time on should be important enough to give it your full attention. No beneath-the-table BlackBerry fiddling in meetings; no IM while on the phone, no thinking about a work problem when your kid is telling you about her day. As an incorrigible multitasker, this was a powerful message for me.

PG&E reinforces these ideas with wallet cards and posters in the halls. At every staff meeting, one of Lawicki's direct reports explains how he or she has embodied one of the concepts in the past month. "I've been through these exercises before, where you spend a few weeks coming up with your vision and values statement, then it goes in a drawer," Lawicki said. "We didn't want that to happen."

Attendees at August's CIO 100 Symposium were treated to a variation on this theme by Dewitt Jones, the renowned National Geographic photographer. He urged the audience to "see the extraordinary in the ordinary" and to ask, "What will I be given today, and will I be open enough to receive it?"

For me, these simple ideas are a means to demonstrate greater respect for the people around me and achieve a greater sense of personal fulfillment. I suspect they will enhance my effectiveness as well. Not bad for three small words.

Abbie Lundberg, Editor in Chief
lundberg@cio.com



BUSINESS TECHNOLOGY LEADERSHIP

PRESIDENT AND CEO Michael Friedenberg
PUBLISHER Gary J. Beach

EDITORIAL

EDITOR IN CHIEF
Abbie Lundberg

EDITOR
David Rosenbaum

EXECUTIVE EDITOR
Elana Varon

ASSISTANT MANAGING EDITOR
Emily Henderson

TECHNOLOGY EDITOR
Laurianne McLaughlin

SENIOR EDITORS
Stephanie Gelston, Kim Nash,
Stephanie Overby

SENIOR WRITER
Thomas Wailgum

ASSOCIATE STAFF WRITERS
Christopher Lynch, Katherine Walsh

COPY EDITOR
Susan Bryant-Still

EDITORIAL ASSISTANT
Kristin Burnham

EDITORIAL ADMINISTRATOR
Jill Paquette

CONTRIBUTORS
Bernard Golden, Martha Heller, Christopher Koch,
China Martens, Gerry McCartney,
Matt Villano, Bob Violino

DESIGN

EXECUTIVE DIRECTOR, ART AND DESIGN
Mary Lester

ART DIRECTORS
Terri Haas, Steve Traynor

ONLINE EDITORIAL

ONLINE EDITORIAL DIRECTOR
Christopher Lindquist

ONLINE MANAGING EDITOR
Michael Goldberg

SENIOR ONLINE EDITORS
Meridith Levinson, Shawna McAlearney,
Esther Schindler

ASSOCIATE ONLINE EDITOR
Diann Daniel

ONLINE WRITER Al Sacco

ONLINE COPY EDITOR
David Gradjan

RESEARCH

RESEARCH MANAGER
Carolyn Johnson

SENIOR RESEARCH ANALYST
Seanna Maguire



CXO MEDIA INC.

INTERNATIONAL DATA GROUP
BOARD CHAIRMAN Patrick J. McGovern
PRESIDENT, IDG COMMUNICATIONS Bob Carrigan



©CXO Media Inc.

WHO COVERS WHAT www.cio.com/staff
E-MAIL letters@cio.com PHONE 508 872-0080
FAX 508 879-7784 ADDRESS CIO Magazine, CXO Media
Inc., 492 Old Connecticut Path, P.O. Box 9208,
Framingham, MA 01701-9208 WEBSITE www.cio.com
SUBSCRIBER SERVICES 866 354-1125 •
Fax 847 564-9453 • E-mail cio@omeda.com
REPRINT SERVICES Keith Williams • PARS International
• 212 221-9595 ext. 319 • E-mail keith.williams@parsintl.com
RIGHTS AND PERMISSION Yadira Pizarro •
212 221-9595 ext. 231 • E-mail yadira@parsintl.com



Bring your customers
the next big thing.
And the next. And the next.
And the next...

The race to win new customers is more competitive than ever. How can cable companies win? That's a question we're helping to answer at Alcatel-Lucent. We are teaming with some of the largest cable companies in the world, providing them with advanced multi-service aggregation networks so they can deliver premium consumer and business services to their customers — with carrier-class reliability and unparalleled service velocity. That's video on demand, high definition television, VoIP, VPN for businesses and other cutting-edge services, all on the same network.

And that's just part of the story. We can also apply our expertise as a leader in wireless networks and blended services to help you expand your offering to next generation converged services, giving customers more reasons than ever to choose cable. Whether it's wireless or wireline, our solutions are so reliable you can offer guaranteed quality of service. We deliver an infrastructure so highly scalable you're ready not just for today's challenges, but for tomorrow's breakthroughs as well. That way, you've got the market covered from every angle.

Because the world is always on.

Alcatel-Lucent.com

Alcatel-Lucent



FROM THE CEO

Are You Open to Innovation?

Is R&D is a core competency you have to own? Not if it costs too much and bogs you down.



At the CIO 100 Symposium this year, delegates were treated to a plethora of ideas, innovation and knowledge sharing that bordered on the extreme. Of all of the issues discussed, I was most intrigued by the concept of open innovation. Both Don Tapscott, author of *Wikinomics*, and Dwayne Spradlin, president and CEO of InnoCentive, discussed in detail how the traditional practice of R&D is not only flawed but essentially dead.

The central idea of open innovation, as defined on Wikipedia, is that "in a world of widely distributed knowledge, companies cannot afford to rely entirely on their own research, but should instead buy or license processes or inventions (i.e. patents) from other companies. In addition, internal inventions not being used in a firm's business should be taken outside the company." Henry Chesbrough, a professor and executive director at the Center for Open Innovation at Berkeley, is credited with coining the phrase.

Now you might say this sounds ridiculous, futuristic or plain scary. However, when Alan Lafley, CEO of P&G and one of the most admired CEOs in the world, proclaims, as he did in 2003, that "50 percent of all P&G discovery and invention could come from outside the company," CIOs and other executives should take notice. This is even more remarkable when you think that only one-fifth of P&G's R&D came from the outside in 2002.

Couple the concept of open innovation with the idea, expressed at the CIO 100 Symposium by Randall Stephenson, CEO of AT&T, that in an IP-based world, the RPMs of commerce will increase exponentially over time, and you need to be thinking about how you can accelerate your own product development cycles. Open innovation not only allows for massive collaboration but it also enables solutions and innovation to occur at a faster pace.

This practice is only going to grow in acceptance. It is something that your organization should not only be discussing but aggressively adopting. Be assured that your competitors are.

To learn more about this remarkable topic, I recommend the following websites: innovation.net, innocentive.com, open-innovation.com and wikinomics.com.

Michael Friedenber, President and CEO
mfriedenberg@cio.com



BUSINESS TECHNOLOGY LEADERSHIP

PRESIDENT AND CEO Michael Friedenber
PUBLISHER Gary J. Beach

CXO MEDIA INC

CIRCULATION

SVP, CIRCULATION Carol A. Spach
SUBSCRIPTION SVCS. SUPERVISOR Tina Pescara

CIO EXECUTIVE COUNCIL

GENERAL MANAGER Mark Hall
MANAGING DIRECTOR, PROGRAM SERVICES Shaw Lively
VP, DEVELOPMENT Dexter Siglin
MANAGING DIR., CONTENT DEVELOPMENT Richard Pastore
MGR., GROUP SERVICES AND RESEARCH Michael Swenson
MARKETING COMMUNICATIONS MANAGER Jennifer Baker
SENIOR ARCHITECT Lawrence Coffin
DIRECTOR OF DEVELOPMENT Steve Rovniak
GROUP SERVICES MANAGER Ellen Friedman
SENIOR MANAGER, MEMBER SERVICES Carrie Mathews
PROGRAM SERVICES MANAGERS
Joyce Dunnells, Michael Fahlsing,
Bill Roche, Janet Williams
PROGRAM SPECIALISTS Lisa Desmarais, Susan Hupp
DEVELOPMENT MANAGERS Bob Diack,
John Harrison, Kathy Mayer
DEVELOPMENT ASSOCIATE Kristin Bradshaw
SALES ASSOCIATE Jennifer Finn

EXECUTIVE PROGRAMS

VP, EXECUTIVE PROGRAMS Ellen Daly
DIR., EVENT MARKETING Mary Conroy
DIR., EVENT OPERATIONS Deb Begreen
SENIOR CONFERENCE PRODUCER Judith Kittredge
NATIONAL SALES MANAGER Curtis Chiu
EVENT PLANNER Sarah Reagan
EVENT COORDINATOR Bethany Whiffin
CLIENT SERVICES SPECIALIST Cress O'Brien
CLIENT RELATIONS ASSOCIATE Erica Foster
SALES ASSOCIATE Nicole Blackburn

INFORMATION SYSTEMS

IDG DIR. OF INFORMATION SERVICES Nancy Newkirk
I.T. MANAGER Sean McCracken
SENIOR USER SUPPORT SPECIALISTS
Christopher A. Kay, Thomas Lupien
USER SERVICES SPECIALIST Gloria Lam
ASSOCIATE USER SUPPORT SPECIALIST James Brevard
SENIOR WEB DEVELOPER David Cohen
WEB DEVELOPER Sanghee Seo

PRODUCTION

VP, MANUFACTURING Chris Cuoco
PRODUCTION MANAGER Heidi Broadley
ASSOCIATE PRODUCTION MANAGER Lisa M. Stevenson

MARKETING

SR. DIRECTOR, MARKETING COMM. Sue Yanovitch
SR. MARKETING COMM. SPECIALIST Susan Murray
MARKETING COMM. SPECIALIST Lynn Holmlund

RESEARCH

RESEARCH MANAGER Carolyn Johnson
SENIOR RESEARCH ANALYST Seanna Maguire

ADMINISTRATION

COO Matt Smith
SENIOR FINANCIAL ANALYST, ONLINE AND
INTEGRATED PRODUCTS Chris Bernardi
ACCOUNTING SPECIALIST Amy Small
EXECUTIVE ASSISTANT TO THE PRESIDENT Diane Martin
FACILITIES SPECIALIST John Kelley
OFFICE SERVICES COORDINATOR Mary E. Wooldridge

HUMAN RESOURCES

VP, HUMAN RESOURCES Patricia Chisholm
HR REPRESENTATIVE Pauline Boyle



CXO MEDIA INC.

INTERNATIONAL OATA GROUP
BOARD CHAIRMAN Patrick J. McGovern
PRESIDENT, IDG COMMUNICATIONS Bob Carrigan



© CXO Media Inc.

Fujitsu recommends
Windows Vista™
Business.

New energy for greater mobility.

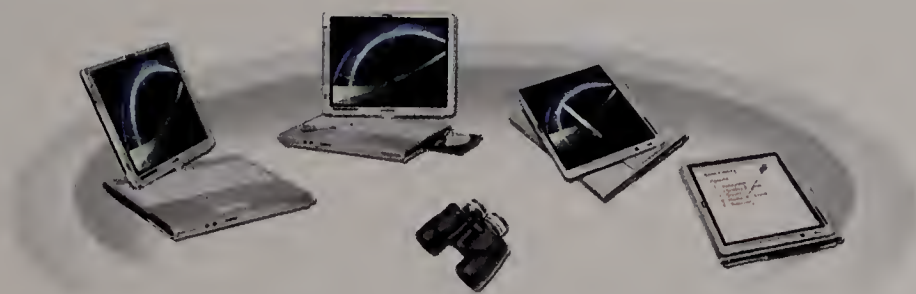
The LifeBook® T4200 Tablet PC: Energize your mobile workforce with Enterprise-class reliability.

The Fujitsu LifeBook® T4200 Tablet PC with Intel® Centrino® Duo Mobile Technology reflects the Fujitsu commitment to delivering the most reliable products. It's manufactured in-house so we can maintain the highest quality standards. The Fujitsu LifeBook T4200 Tablet PC also features the industry's first bi-directional LCD hinge and a brilliant, 12.1" XGA display with wide viewing angles, so it's impressive any way you look at it. And whether you use its keyboard or powerful inking capabilities and pen-driven navigation, you get the best of both worlds. Go to us.fujitsu.com/computers/reliability for more information.

SUPERIOR CONNECTIVITY Wi-Fi, Gigabit Ethernet, modem and optional Bluetooth 2.0

DUAL-FUNCTIONALITY
it's a notebook and a Tablet PC

BUILT-IN MODULAR BAY add a weight-saver, media drive or 2nd battery



FUJITSU

THE POSSIBILITIES ARE INFINITE





**We have just one thing
to say to everyone who
believes a SINGLE platform
can't change EVERYTHING
about data management.**



We are Technology Execution...

Staffing Services
Team Services
Component Services
Workforce Management Services

...which is why we are committed to bringing you innovation, expertise, and the nation's best talent.

TEKsystems® is proud to have earned a reputation for offering unparalleled technology expertise. In fact, as a leading technology services company, our commitment to creating and upholding the highest standards is only exceeded by our passion to satisfy customers through superior service.

Deploying expertise with the right skills and methodology to manage complex technology implementations is our primary goal. We constantly challenge ourselves to build upon our robust portfolio of services, and deliver top-tier talent capable of implementing virtually any form of technology.

Visit us at www.teksystems.com for more information, or call 888-835-7978 to arrange to meet with an account manager.

TEK
systems. people YOU CAN TRUST. results YOU CAN COUNT ON 

BOARD OF ADVISERS '07

CIO wishes to acknowledge the 2007 Editorial Advisory Board members for their ongoing guidance and reality check of the magazine's content and focus. We thank them for their generosity in sharing their insight into the world of IT leadership.

GREGOR BAILAR

CIO, retired
Capital One
Falls Church, Va.

DOUG BARKER

CEO
Barker and Scott Consulting
Washington

LARRY BONFANTE

CIO
United States Tennis Association
White Plains, N.Y.

SHEILA DONAHOE

CIO
Bluegreen
Boca Raton, Fla.

ANDY GEISSE

*EVP, Worldwide Customer Service,
former CIO*
AT&T
San Antonio

BOB HOLSTEIN

CIO
National Public Radio
Washington

BUD MATHAISEL

CIO, retired
Solelectron
Milpitas, Calif.

MAGGIE MILLER

CIO
Warner Music Group
New York

SHANE O'NEILL

CTO
Fandango
Los Angeles

SUE POWERS

CIO
Worldspan
Atlanta

REBECCA R. RHOADS

CIO
Raytheon
Lexington, Mass.

LARAINÉ RODGERS

President
Navigating Transitions
Tucson, Ariz.

JAMES F. SUTTER

Senior Partner
The Peer Consulting Group
Newport Beach, Calif.

RICHARD W. SWANBORG JR.

President
ICEX
Boston

ROBERT P. WEIR

VP, Information Services
Northeastern University
Boston

STEVE WILLIAMS

CIO
Mattress Giant
Addison, Texas



How CIOs in Mid-Sized Enterprises Can Close the IT Knowledge Gap

TEKsystems' Thought Leadership Series
White Paper - Summer 2007

"Surprisingly, there appears to be a significant knowledge gap on what it takes to be a successful CIO in a mid-sized enterprise."

As the premier provider of Technology Execution services, we offer expertise to thousands of CIOs everyday. It is a privilege to support organizations of all sizes, and in this capacity, we've uncovered some significant evidence suggesting CIOs in mid-sized enterprises are simply not receiving their fair share of attention.

Understanding your business as insiders—recognizing the resource and financial restraints CIOs must work around to get their jobs done—is what makes such insights especially valuable. To learn more, view our white paper online at <http://whitepaper.teksystems.com>.

Our goal is to become a valuable contributor to your business. And our Thought Leadership Series is one more way to demonstrate that commitment to you.

<http://whitepaper.teksystems.com>

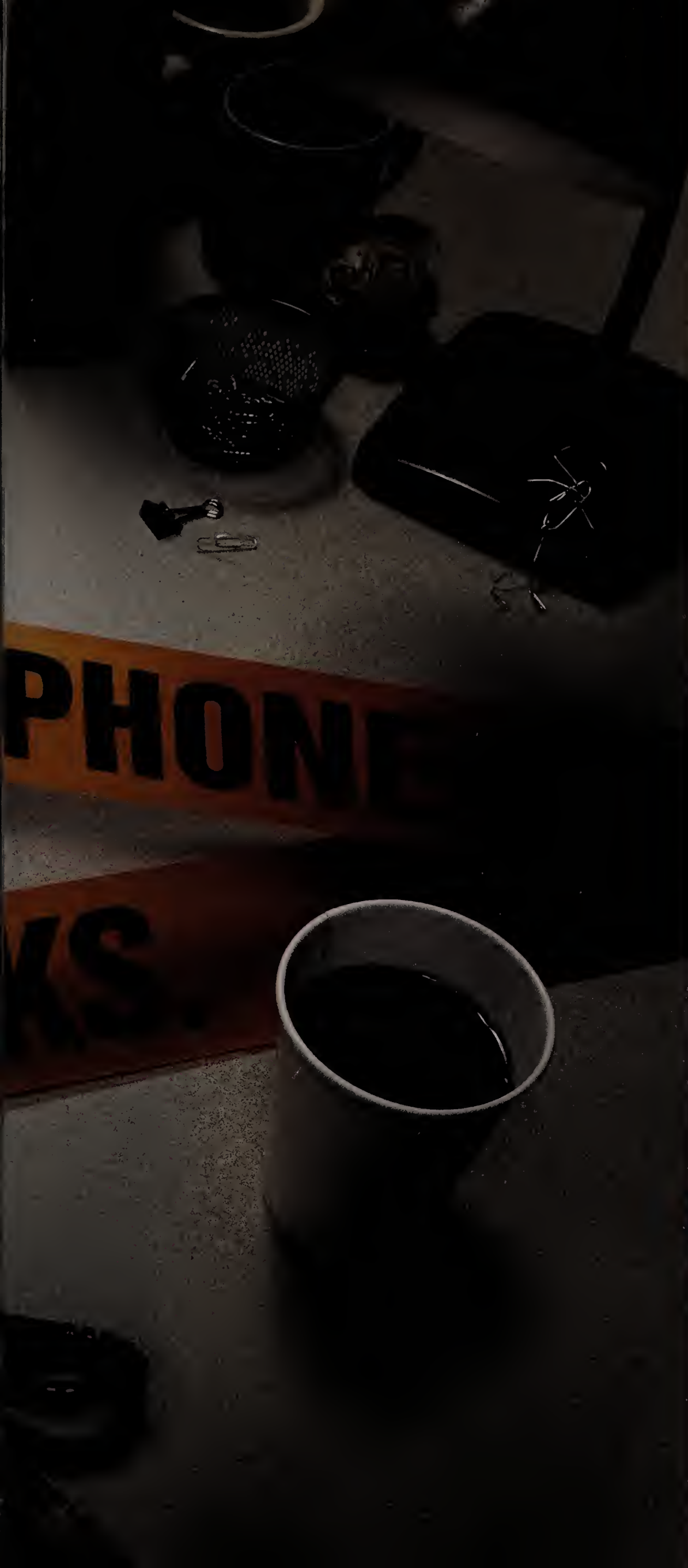
TEK
systems.

TEKsystems, Inc. is an Allegis Group, Inc. company
Copyright © 2007 All rights reserved



TEACH YOUR OLD

NEW TRICK



All we are saying is give perfectly good hardware a chance.

VoIP is the future. So step into it. Not by ripping and replacing, but by sticking with the here and now. It's possible because now moving to VoIP isn't about hardware.

It's about software.

You can keep your hardware—your PBX, your gateways, even your phones. Simply move to VoIP with software. Software that integrates with Active Directory®, Microsoft® Office, Microsoft Exchange Server, and your PBX.

Maximize your current PBX and phone investment and make it all part of your new software-based VoIP solution from Microsoft. Your hardware is ready when you are. Learn more at microsoft.com/voip

VOIP AS YOU ARE.

Your potential. Our passion.

Microsoft®

Goldfish have a memory span of 3 seconds.

They can't even see the past, much less the future.
But you can. With proven business intelligence and analytic software from SAS.

www.sas.com/goldfish



 **sas**

**THE
POWER
TO KNOW**

trendlines

EDITED BY LAURIANNE McLAUGHLIN

NEW * HOT * UNEXPECTED

Five Years After Sarbox, Is IT Better Off?

COMPLIANCE Paul Sarbanes and Michael Oxley have left Congress, but they're never far from the thoughts of CIOs responsible for making their companies' financial systems produce accurate data. A favorite kvetch is the high cost of complying with the Sarbanes-Oxley Act of 2002. But CIOs are, in some ways, now better off.

For the past five years, CIOs have dealt with being micromanaged by colleagues outside of IT. They've suspected a conspiracy by CFOs to undermine them. They've been inundated by vendors with fabulous claims of compliance-in-a-box and they've listened to former Federal Reserve Chairman Alan Greenspan

decry Sarbanes-Oxley as a "nightmare" that should be rewritten.

But looking back, the rules that Sarbanes, a former Senate Democrat from Maryland, and Oxley, a former Republican representative from Ohio, wrote to make U.S. companies more accountable for their financial data also have lifted the career trajectories of some CIOs, says Lee Dittmar, a

principal at Deloitte Consulting who oversees enterprise governance.

Yes, Dittmar says, Sarbanes-Oxley burdened technology departments by forcing, for example, more detailed

reporting about how software projects affect a company's financial data. IT also now has to work side by side with internal and external auditors, and the finance

Continued on Page 20



Wikia Throws Google a Curveball

SEARCH Google and other search engines face far more than just a new rival in Wikia: They face the prospect of hundreds, even thousands, of new competitors.

The Wikia search engine project will enter the open-source domain, drastically reducing the cost for just about anyone to make a search engine, says Gil Penchina, CEO of Wikia. Instead of paying millions to get a site going, new search companies will find key items free online, he says.

"In search, it still costs about \$5 million to \$10 million to build a site," says Penchina. "We want to make it possible for anyone to build a search site for \$500. We don't view Google as the competition, we view cost as the competition."

The project, started by Wikipedia cofounder Jimmy Wales, consists of four components: the indexing of the Web, a search engine application, a ranking algorithm and a collaborative filter system.

One of the most expensive components of a search engine is the effort to index the Web. Wikia believes its crawl of the Web will cost nearly nothing, because it's asking Internet users to help out by downloading Web crawling software from Grub, which will use their computers during idle time and send results back to Wikia for the index. So far a thousand people have downloaded the application, and Penchina is hoping for 100,000 or more.

While the algorithms to determine search rankings are usually secret recipes, Wikia plans to post its algorithm on the Internet for free, so anyone can see how results are determined.

The collaboration part of the project will have users sort through and filter webpages. This adds a human touch, and Wikia's founders hope that human touch will lead to better Internet searches.

-Dan Nystedt

Wanted: More ROI on Innovation Efforts

INNOVATION Innovation may be today's business mandate, but that doesn't mean everyone's good at it. So finds the fourth annual global survey and report on innovation by the Boston Consulting Group (BCG), which points to widespread executive frustration with the return on innovation investments. That said, respondents to the survey (2,500 worldwide executives) say they know that business performance and growth hinge on innovation. The highlights:

Innovation's importance grows. Companies deemed innovative by respondents (Apple and Google top the list) outperform their peers by nearly 400 basis points per year in terms of stock price.

Dissatisfaction with innovation spending. Satisfaction with returns on innovation spending has fallen. Last year, 52 percent of respondents were satisfied. This year? Just 46 percent.

Biggest obstacles to innovation. "Risk-averse corporate culture" (38 percent) and "overly lengthy development times" (36 percent) were the most-reported problems that prevented better innovation returns. And 54 percent of executives said their companies moved from idea generation to sales too slowly.

Metrics needed. The metrics that could be most appropriate to drive better performance, according to the study, are used the least: time to market (used by 18 percent) and return on innovation investment (used by 22 percent). What metrics are commonly used? Customer satisfaction (57 percent) and overall revenue growth (51 percent).

Most satisfied. Fifty-one percent of executives at technology, telecommunications and travel companies were satisfied with the results of their innovation spend. Least satisfied: execs from financial services (41 percent) and retailers (43 percent).

Global innovation grows. About three-quarters of Asian (76 percent) and European (74 percent) companies report they'll be increasing innovation spend, while only 64 percent of North American execs will increase theirs.

—Diann Daniel

Boom Time for Hackers

SECURITY It's a good time to be a malicious hacker. While it's not a time of revolutionary new techniques in hacking for profit, business is booming for the established methods. The good guys continue to lag badly behind, despite increased investment in information security defenses. A report by antivirus software maker Sophos calls the recent uptick in malware a "deluge."

By April 2007, more than 250,000 websites were hosting malicious code. More than 8,000 are added to that total every day.

SOURCE: Sophos

After Sarbox

Continued from Page 19

group, to identify how accounting data is handled electronically and manually. Then IT must tighten those processes to prevent fraud.

"It has been painful," Dittmar says. For many companies, documenting, testing and maintaining controls to the extent required was a major change.

But as companies have struggled to follow Sarbanes-Oxley, CIOs have had the chance to talk with senior executives specifically about how IT affects the business, says Patty Azzarello, a CIO careers consultant in Palo Alto, Calif. "This conversation, in many cases, opened the door for CIOs to get more airtime in budget and planning discussions, which is vital if they want to have an impact on corporate strategy."

Compliance costs depend on your company's complexity and past history. But generally, costs have been declining, according to a recent survey from Financial Executives International (FEI), a professional association. Total average cost for a company to comply with Section 404—which governs internal controls—was \$2.9 million last year, down 23 percent from 2005, FEI found.

Insurance giant American International Group (AIG) now spends 30 percent to 40 percent less per year than it did in 2003, when it embarked on compliance, says Anders Land, vice president of internal control in the comptroller's unit.

"Instead of having a defined number of consultants doing the project, it becomes 10 percent of an internal employee's work," he says. So it's now harder to say what's a Sarbanes-Oxley cost and what isn't, he says. "That's positive. It means the performance of good, effective controls is part of company culture, and that's the whole purpose of the law."

—Kim Nash



Having data storage problems? Let CDW turn them into data storage solutions.

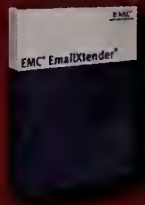


EMC² Celerra[®] NS20

- Supports NAS, iSCSI and Fibre Channel SAN connectivity
- Simultaneously connects to multiple types of storage networks
- Delivers scalable performance and a high level of reliability
- Celerra Startup Assistant software allows system to go from power up to production in as little as 15 minutes
- Allocates storage capacity quickly via automated volume management with thin provisioning capabilities

EMC²
where information lives[™]

CDW 1276366

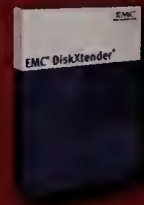


EMC² EmailXtender[®]

- Archiving solution that helps retain and manage e-mail as a record in order to achieve regulatory compliance, adhere to organization retention policies and support legal discovery activities
- Supports Microsoft[®] Exchange, Lotus Notes[®]/Domino[®], Bloomberg Mail and SMTP-based e-mail
- Also supports environments with mixed e-mail applications and all EMC² storage platforms

EMC²
where information lives[™]

CDW 1053039



EMC² DiskXtender[®] for Windows[®]

- Automatically migrates infrequently accessed data to more cost-effective storage — disk, tape or optical
- Significantly shortens backup and recovery windows
- Recognizes data value, retention and compliance requirements
- Reduces storage costs while optimizing IT resources
- Provides seamless data access regardless of file location

EMC²
where information lives[™]

CDW 987362

Call your CDW account manager for pricing.

We're there with the storage solutions you need.

Today, with more data being stored, more assets are at stake. And there is a big difference between storage and secure storage. At CDW, we're there with storage and backup specialists that will work with you to find the right solution for your setup. Then, we'll draw from a full line of top-name storage technology so you can increase capacity and reduce risk. So call today and make sure your data and your company are secure.

CDW.com | 800.399.4CDW



The Right Technology. Right Away.

For Beijing Olympics, Deadline Looms Large

2008 OLYMPICS August marked the one-year point until the 2008 Olympic Games begin in Beijing. Standing on the street in the Chinese capital, can you tell? Yes and no.

Construction cranes still tower over the city, and building continues apace—but that's not a significant change over the past 10 or even 20 years. More new cars traverse Beijing's streets—an estimated 700 to 1,000 per day—and with them comes a Dickensian haze of smog. June 2007 had the worst air quality for that month in seven years. When are the opening ceremonies, again?

In terms of technology, many question marks remain about what Beijing will offer. To date, China has

not issued third-generation (3G) telephony licenses. All indications are that China will use its own time division-synchronous code division multiple access 3G technology, and that its deployment will be limited.

Also discussed is citywide wireless Internet, which may be more of a move toward fourth-generation technology than just a stop-gap implementation.

Beijing announced it would ban a million vehicles—one-third of the city's cars—from Aug. 7 to Aug. 20 as a trial run for next year, but no evidence of that ban has emerged. New

Under construction: Beijing not quite ready for its Olympic site closeup

subway lines planned for the games will not open until next year.

Olympic merchandise is everywhere, and China's media buzz with mentions of the games. But the capital's long-stated goal of having English-speaking taxi drivers for the games seems to be a pipe dream.

One year off, China still has a lot of work to do before an expected half-million foreign visitors arrive and billions of television viewers tune in.

—Steven Schwankert



Former Gillette CEO Shares Keys to Success

BOOK REVIEW If you want a view into what makes a big-time CEO's mind tick, you may enjoy James Kilts's new book, *Doing What Matters*. Kilts knows his way around being a high-profile leader: As chairman and CEO of Gillette, he oversaw a results-oriented renaissance at the consumer products giant before guiding the firm to a merger with Procter & Gamble in 2005. Prior to that, he served as CEO of Kraft Foods and Nabisco.

Kilts, who's now a founding partner at private equity firm Centerview Partners, uses the book to share his lessons for current and aspiring executives on what really matters to personal and business success.

Most of these lessons will resonate with, rather than surprise, seasoned IT executives. For example, Kilts says don't underestimate the value of mentors or the value of showing loyalty to your staff. Among his other keys to success, he counts a "continuous dissatisfaction with the status quo" and a belief that small moments, like a casual lunch to discuss current problems, will stay with your subordinates.

**DOING
WHAT
MATTERS**

**JAMES
M. KILTS**

Former Chairman and CEO of The Gillette Company

Doing What Matters

James Kilts, with John Manfredi and Robert Lorber
Crown Business,
Sept. 2007, \$27.50

What's most interesting about the book is not its bullet point lessons but its narratives. You will get colorful glimpses into Kilts's struggles at Nabisco and Gillette,

his personal accounts of talking with Warren Buffett (a Gillette board member) and his tangles with the national and Boston-based media during Gillette's merger with P&G.

In advance of his book publishing, Kilts shared some specific advice for aspiring IT executives in an interview for CIO.com: See "My Keys to Career Success," www.cio.com/article/126403.
—Laurianne McLaughlin

THROW THE FIRST PUNCH.

Successful companies don't flinch. They confidently assert their presence in the marketplace and refuse to let fear paralyze their ambition. From consulting to systems integration to outsourcing, Unisys Solutions for Secure Business Operations enable you to be more innovative, more competitive and as bold as you want to be. Let the competition block for a change.

Security unleashed.

UNISYS

Secure Business Operations. www.securityunleashed.com

by the numbers

BY MARGARET LOCHER

Supply Chain's Missing Link

Cost-minded supply chain strategies don't advance the business priority of improving customer service

It's all about the customer: 71 percent of business operators said their top business objective is increased loyalty and customer satisfaction, according to a recent Manufacturing Insights survey of 800 companies. But their number-one supply chain objective is to reduce manufacturing and logistics costs. "That's a big disconnect," says Kim Knickle, program director and lead analyst at Manufacturing Insights.

If businesses don't align their strategic objectives with supply chain priorities, IT investments in supply chain will not be effective, Knickle says. One of the reasons for the misalignment of goals could be that CIOs are focused on more day-to-day issues, she says. IT may need to be more proactive about showing the business ways that its supply chain can improve customer strategy goals.

"CIOs aren't always invited to conversations," Knickle says. "IT needs to talk to the business to ensure IT investments align with corporate objectives." The survey showed that business operators want more collaborative processes within the organization, says Knickle.

Historically, strategy development within each business function was a siloed process, says Simon Ellis, research program director at Manufacturing Insights: "But as technology is increasingly outsourced, collaboration becomes more important."

This is especially true when business constituents don't understand that the IT budget is already limited. Ellis says most IT budgets haven't increased during the past five years. "IT is under greater pressure to stretch their dollars," he says, noting that the supply chain can't be a center of innovation without the proper budget.

"The business must be willing to see IT from more than a service and cost-saving angle," Knickle says.

Best Practices

- 1 Show the board** that the supply chain effort can do more than reduce costs. Detail the business value of any supply chain innovation you pitch.
- 2 Keep the customers** in the front of your mind. Emphasize supply chain changes that could improve the customer experience.
- 3 Create a strategic framework** for IT decision making. In times of cost pressure, this gives you boundaries for choosing among business requests.

TRENDLINES

What's Your Supply Chain Focus?

What's your top supply chain priority?

48%

of businesses say **reducing material, manufacturing and logistics costs.** But where's customer service?

What IT investments will be most important to your global supply chain performance in the next two years?

1. Advanced supply network planning or manufacturing scheduling
2. Advanced inventory management or optimization
3. Supply chain execution, logistics control and management

SOURCE: Manufacturing Insights

CIO2CIO 2 PERSPECTIVES

Today's IT Leaders on Market Trends

ALIGNING IT AND BUSINESS

Best Practices for Bridging the Eternal Gap

Even after years of attention, the issue of aligning IT with business still roils. How can CIOs make more progress in their efforts?

When IDG Research Group surveyed 300 business and IT executives in the spring of 2007, respondents overwhelmingly cited aligning IT with business objectives as their No. 1 IT priority. More than half say that the importance of aligning IT with business goals will only increase over the next 18 months. At the same time, only 15 percent say they have been very successful at aligning IT and business goals, and only 9 percent say they've been very successful at automating IT operations and processes.

The problem is that business alignment often determines IT spending levels. "Our IT spending is limited to supporting the business goals," says Roger Jaffe, CIO of APS Healthcare, a provider of specialty health care solutions. "Unless I ask for an appropriation that supports a current business goal, the project is not going to be approved."

Hurdles to Alignment

One challenge is that the true business goals of the enterprise are not always well articulated within the organization. And despite the fact that technology has become so critical to day-to-day operations, at some organizations IT is still treated as a cost center. Frequently, IT management and staff are not properly trained in business issues.

In addition, real and perceived boundaries exist between the IT department and the lines of business—and many of these boundaries are organizational. In some cases, IT is separated from the business side, which still perceives that it exists only to maintain and update computer systems.

Another challenge is that many organizations lack the automation necessary to adapt to changing needs. As a result, the IT staff is more focused on performing manual processes than participating in strategic business initiatives. That is, IT spends so much time supporting day-to-day operations that it's difficult for it to address long-term business goals.

"Lots of times we tend to focus on where we are right now and in the very short-term future, rather than projecting two to three years down the road where we want to be," says Chris Rapp, director of technology at Sovereign

Bank. "We need to forecast a little bit better. We could line up the business goals along with what steps we would need to take on the IT side."

Best Practices

For organizations to have any chance of aligning IT with business goals, senior executives must clearly articulate the organization's business objectives to key stakeholders, and update those goals on a regular basis to reflect changing market conditions.

IT management needs to be kept aware of these business goals. That might even mean giving the CIO or another high-level technology executive a seat on the board of directors. But at the very least, the top IT executive should be a key architect of processes that support business growth.

About CIO2CIO Perspectives: This peer-based thought leadership program analyzes quantitative research and tests it via qualitative interviews with actual CIOs. The resulting executive insight is then disseminated via CXO's multimedia assets. To learn more about CIO2CIO Perspectives, please contact mavery@cxo.com.



In addition, organizations must try to automate processes wherever possible. The more tasks that can be automated, the better businesses will be able to react to their changing needs and the requirements of their customers. Automation enables the IT staff and end users to spend more time on strategic initiatives and less time grappling with manual processes. This enhanced productivity can have a direct impact on the bottom line.

Automation is a key goal for 180 Medical, a medical equipment supplier. The company is deploying a warehouse management system and an electronic patient records system to automate its processes.

"One of our objectives is to leverage technology so that we can streamline the existing process," says Mike Harman, CIO. "We still have a lot of paper-based processes. A lot of people work hard but still kind of spin their wheels. We think we can build in a lot more efficiencies."

Benefits of Automation

As with automation at the desktop level, many tasks can be automated in the data center. As the heart of the organization, the data center must be flexible and adaptable. For instance, IT should set up data center resources so that they automatically reconfigure themselves to meet rising demands on the corporate Web site.

The IDG Research survey shows that organizations see a variety of benefits as a result of automating IT operations and processes. Those respondents whose organizations are using automation cite benefits such as an increase in IT productivity (70 percent of respondents), increase in end-user satisfaction with IT (54 percent), improved return on IT investments (52 percent) and reduced costs (50 percent).

In addition to automation, it's critical to put in place IT processes that will align to the business. For example, organizations can provide higher service levels to the accounting department at the end of a quarter, when the department is busiest.

Frameworks such as the IT Infrastructure Library (ITIL) and Control Objectives for Information and related Technology (COBIT) have emerged globally as best practices to help improve IT services and create processes that match the business needs. The frameworks enable organizations to speak a common IT language so that everyone understands the processes. They also provide a proven, clear standard for building services that align to both business and IT.

Yet surprisingly few organizations have adopted or are planning to adopt ITIL or COBIT, according to the survey. Only 1 percent say they have fully deployed the

Novell Alignment Solutions

Organizations can deploy technology solutions to help automate processes and improve the delivery of IT services.

Novell provides several solutions that can help organizations achieve automation. Systems Management from Novell is a comprehensive set of integrated ITIL-based services that orchestrate IT management and business processes across diverse server and client platforms.

Novell ZENworks is a comprehensive set of integrated tools that automate IT management and business processes across the life cycle of desktops, laptops, servers and handhelds. ZENworks automatically enforces business and IT policies to dynamically manage and maintain IT resources based on user and asset identities.

ZENworks and Systems Management work from the desktop to the data center, enabling organizations to determine how well IT delivers the full spectrum of services to support the business. These technologies help CIOs find more relevant metrics that show business alignment, service quality that supports alignment and cost efficiency in delivering service to the business.

frameworks, and only about one-third say they are at some stage of planning deployment or implementing them. This dearth of adoption may be one of the reasons why so few respondents report success at alignment and automation.

In addition to these practices, organizations can implement technology solutions that help IT better serve business needs and goals (see sidebar above).

Aligning IT with business goals is more important than ever, but it's not an easy process. Organizations that use a combination of best practices and technology solutions can make IT more business savvy, automate tasks and use applications more efficiently to meet business goals.

As with other key initiatives, IT and business alignment requires constant communication between technology and business executives. Rapp says he tries to be as detailed as possible in documenting and outlining technology initiatives when presenting them to the business units.

"I want to make sure that all departments know, at least from stuff that affects the IT department, exactly what we're doing to keep everyone up to speed and on the same page," Rapp says. ■

Go to www.cio.com/whitepapers/alignment

to obtain a free download of the complete white paper "Aligning IT and Business: Bridging the Eternal Gap". Based on a major research survey by IDG Research Services featuring in-depth discussions with CIOs at midsize and enterprise class organizations, this just-released white paper will help CIOs analyze their IT infrastructure so that it runs more effectively and efficiently, drawing on peer insights to create highly available and manageable systems.

6th Annual

DIGITAL ID WORLD

IDENTITY IS CENTER

September 24 - 26, 2007

Hilton San Francisco

San Francisco, CA

Walk away with more information, more perspective and more profiles of real world deployments by those who did them than at any other conference!

Interact with peers in over 40 hours of in-depth discussion providing you with perspective and analysis of how digital identity is being leveraged to help integrate, manage and secure the network. Sort the trends and discover the truth about what works and what doesn't.

Topics to include:

- Deploying identity-based network access control
- Using identity to achieve compliance
- Authentication as risk management
- How identity fits into SOA
- Understanding OpenID and CardSpace
- Achieving "anywhere access" with E-SSO
- Understanding successful federated identity deployments
- Role Management as the lynchpin of scaling identity
- Integrating machine identity into an identity architecture
- Addressing challenges in identity and the telco space
- Overcoming hurdles specific to identity and financial services
- Using identity to address healthcare specific concerns

Register now for the 6th annual **Digital ID World Conference** and take advantage of the early registration discount—reference **Priority Code AD** and attend the conference for \$995. This offer expires September 21, 2007.

Digital ID World. Real World Deployments. Real World Perspective.

Visit www.digitalidworld.com

or call 800-366-0246 to register.

Produced in conjunction with:

CSO
The Resource for
Security Executives

management software combines drives from multiple vendors as if they were one virtual drive, letting Etcheverry avoid getting locked in to the expensive, proprietary drives that array-based storage systems often require.

Although storage virtualization technology is fairly new, it's quickly gaining traction in the enterprise. In 2006, 20 percent of 1,017 companies surveyed by Forrester Research had adopted storage virtualization. By 2009, 50 percent of those enterprises expect to. And the percentages are even higher for companies with 20,000 or more employees, the survey notes: 34 percent of such firms had deployed storage virtualization in 2006, and that will climb to 67 percent by 2009.

original portions of changed data and make it easier to go back to the original version. All these activities have become harder to accomplish using traditional storage management techniques as data volumes surge and time for backup chores decreases.

Because storage virtualization technology used for these purposes copies just the individual parts of changed data, not entire files or even drive volumes as in traditional host-based storage architectures, these data-protection activities are faster and tax the network less. "You end up transferring 40 or 50 percent less, depending on the data you have," says Ashish Nadkarni, a principal consultant at the storage consultancy GlassHouse Technologies.

This efficiency lets a CIO contemplate

Understanding these capabilities, a CIO could thus introduce 24/7 availability and disaster recovery, perhaps as part of a global expansion strategy. That is precisely what Etcheverry is doing at Champion. "We now have a zero-window backup, and I can rebuild a drive image in almost real-time," he says.

Some enterprises have gained additional advantage from storage virtualization by combining it with an older technology called thin provisioning that fools a drive into thinking it has more capacity than it has; this is done typically to create one standard user volume configuration across all drives, so when you replace drives with larger ones, IT staff does not have to change the user-facing storage structure. By adding storage virtualization, these standardized, thin-provisioned volumes can exceed the physical limit of any drive; the excess is simply stored on another drive, without the user knowing. "This really eases configuration," says Wasatch's Engh. That also reduces IT's need to monitor individual drive usage; the virtualization software or appliance just gets more capacity where it can find it.

For example, Epilepsy Project, a research group at the University of California at San Francisco, uses thin provisioning, coupled with Network Appliance's storage virtualization appliance. The project's analysis applications generate hundreds of gigabytes of temporary data while crunching the numbers. Rather than give every researcher the Windows maximum of 2TB of storage capacity for this occasional use, CIO Michael Williams gives each one about a quarter of that physical space, then uses thin provisioning. The appliance allocates the extra space for the analysis applications' temporary data only when it's really needed, essentially juggling the storage space among the researchers.

The Hard Part

Storage virtualization's newfound flexibility and control does have risks. "The flexibility can be your worst nightmare—it's like giving razor blades to a child," says

"Everything you thought you knew about storage management you need to not bring to the party."

—Chris Walls, president of IT services, healthcare data management firm PHNS

But storage virtualization requires a clear strategy, Etcheverry says. "A lot of people don't think much about storage, so they don't do the planning that can save costs," he says. Because storage virtualization is a very different approach to managing data, those who don't think it through may miss several of the technology's key productivity and cost-savings advantages, concurs Nik Simpson, a storage analyst at the Burton Group.

Better Backups

Strategically, storage virtualization brings the most value to resource-intensive storage management chores meant to protect data and keep it available in demanding environments. These chores include the following: replication to keep distributed databases synchronized; mirroring to keep a redundant copy of data available for use in case the primary copy becomes unavailable; backup to keep both current and historical data available in case it gets deleted but is needed later; and snapshots to copy the

continuous backup and replication, and enables quick moves to new equipment in case of hardware failure. "We can add new storage as needed and have data transferred in the background, without the users even knowing," says Ryan Engh, IT infrastructure manager at the investment firm Wasatch Advisors, which uses DataCore's virtualization software.

Another advantage: "This prevents the states of the disaster recovery site and the production site from pulling apart," he says—a common problem in a traditional environment where the two data sets are usually out of synch because of the long replication times needed.

Moreover, the distributed nature of the data storage gives IT great flexibility in how data is stored, says Chris Walls, president of IT services at the healthcare data management firm PHNS, which uses IBM's virtualization controller. "That control layer gives you the flexibility to put your data in a remote site, or even in multiple sites," he says—all invisible to users.

Your potential. Our passion.

Microsoft

MICROSOFT SYSTEM CENTER. DESIGNED FOR BIG.

Microsoft® System Center is a family of IT management solutions (including Operations Manager and Systems Management Server) designed to help you manage your mission-critical enterprise systems and applications.

Nissan manages 56,500 PCs on three continents with System Center. That's big. See Nissan and other case studies at DesignedForBig.com

Microsoft®
System Center

"I am fearless.

I protect a 2 billion dollar retail business.

I believe security should enable
business growth not limit it.

I focus on what's important.

I lead.

I innovate.

I win.

I am fearless."



When it comes to security, most businesses understand what it means to fail. But few can imagine what it would mean to succeed. RSA's information-centric security solutions can move your business forward. That's why we're the chosen security partner of more than 90 percent of the Fortune 500.

Don't just secure your business. Accelerate it. Learn more at www.rsa.com/go/kayak



The Security Division of EMC

Secure Anytime
Anywhere Access

Protect
Customer Identities

Secure
Enterprise Data

Manage Compliance
and Security Information

Wasatch's Engh. The issue that storage virtualization introduces is complexity.

Although the tools keep track of where the files' various bits really are, IT staff not used to having the data distributed over various media might manage the disks the old-fashioned way, copying volumes with partial files rather than copying the files themselves for backup. Or when setting up virtualized storage networks, they might accidentally mix lower-performance drives into high-performance virtual servers, hindering overall performance in mission-critical applications, notes GlassHouse's Nadkarni.

Virtualization tools aren't hard to use, but it's hard for storage engineers to stop thinking about data from a physical point of view, says PHNS's Walls. "Everything you thought you knew about storage management you need to not bring to the party," he adds.

Another issue is choosing the right form of storage virtualization, network-based or array-based. The network-based virtualization technology is delivered via server-based software, a network appliance, or an intelligent Fibre Channel switch, and it comes in two flavors: block-level and file-level. Array-based virtualization is typically provided as part of the storage management software that comes with an array.

Array-based virtualization is mature, says Burton Group's Simpson. But it's limited to storage attached directly to the array or allocated just to that array via a SAN; IT usually must buy array storage from the array vendor, creating expensive vendor lock-in.

Network-based storage virtualization has been in existence just a few years and so has largely been offered by start-

ups. It's the most flexible form of storage virtualization, says Forrester's Andrew Reichman, and lets you manage almost all your storage resources, even offsite, as long as they are available via the SAN. Although these tools can theoretically act as a choke point on your SAN, in practice the vendors are good at preventing that problem, he notes.

Most network-based storage virtualization products work at the block level, meaning they deal with groups of bits rather than whole files. While block-level network-based storage virtualization is the most flexible option, the technology typically requires that an enterprise change its storage network switches and other network devices to ones that are compatible, Nadkarni notes. "But no one wants to shut down their SAN to do so," he says. Although you can add the technology incrementally, that just raises the complexity, since you now have some virtualized storage and some nonvirtualized storage, all of which need to be managed in parallel.

Thus, most organizations should consider adopting network-based storage virtualization as part of a greater storage reengineering effort, he advises.

That's exactly what both Champion's Etcheverry and PHNS's Walls did. Etcheverry brought virtualization in as part of an enterprisewide storage redesign, while Walls brought it in as part of adding a new data center and disaster recovery site. In both cases, all the setup work happened in a nonproduction environment and could be tested thoroughly without affecting users. Once the two IT leaders were happy with their new systems, they then transferred the data over and brought them online. That meant there was only a single disruption to the storage environment that users noticed. "This was a one-time event," Walls notes. **CIO**

Galen Gruman is a frequent contributor to *CIO*. You can reach him at ggruman@zangogroup.com.

Fear less. Do more.

PCI Compliance: Securing Credit Card Data

RSA's solutions for PCI compliance help ensure that credit card data entrusted to you never becomes a liability. We offer sustainable, flexible solutions to help you remain compliant even as data security standards evolve.

RSA can help your organization:

- Discover and classify credit card data and applications
- Secure data regardless of where it resides
- Provide comprehensive access control
- Actively monitor security events
- Leverage log data to prove compliance

Learn to fear less and do more.
Visit our PCI Resource Center
for FREE research, white papers,
webinars, podcasts and more:
www.rsa.com/go/kayak



The Security Division of EMC

©2007 RSA Security Inc. All rights reserved. RSA and the RSA logo are either registered trademarks or trademarks of RSA Security Inc. in the United States and/or other countries. All other products and services mentioned are trademarks of their respective companies.

More Money Savers

For other cost-cutting strategies, see **RETHINK YOUR STORAGE INFRASTRUCTURE TO SAVE MONEY, SIMPLIFY MANAGEMENT** at www.cio.com/article/126650.

CIO.com

SAY HELLO TO

One SINGLE difference.

The Simpana™ data management software suite is designed and built on a single code base. Consequently, its modules for Data Protection, Archive, Replication, Resource Management and Search work together seamlessly and share a single set of common services. The result? Singular efficiency, flexibility, and scalability. It's an unprecedented Singular Information Management™ approach so-called "integrated" solutions can only dream about.

A groundbreaking release.

The Simpana name is new, but the powerful software behind it is not. We introduced our single platform architecture almost a decade ago with the launch of CommVault Galaxy® Backup and Recovery. This was followed by the QiNetix™ software suite with modules for Archive, Replication, and Resource Management.

The 7.0 release of the newly-named Simpana suite is the largest in our history and includes major enhancements to Data Protection, Archive and Replication solutions like Single Instance Store, Advanced Archiving, High-Performance Content Indexing and Data Classification.

Simpana 7.0 software also builds on the success of our singular approach by bringing together superior data management and unique, enterprise-wide Search and Discovery—changing the way companies store, manage and access enterprise information across all tiers of storage.

SIMPANA™

software suite

**Singular
Information
Management.™**

**Infinite
possibilities.**

An Industry Milestone: Unprecedented Search transforms managed data into information.

Simpana 7.0 software creates a single, virtual pool of searchable content from files across online storage, archive, and backup data copies. Simpana software then gives authorized users real-time access to this pool of historical and current data with a single query using a simple, search-engine-like interface.

Whether used for legal discovery, business compliance, or to improve productivity and competitiveness, managed data is simply and quickly transformed into powerful information by putting it at the fingertips of all types of business users.

Infinite Possibilities.

No matter what your data management needs may be—today and tomorrow—Simpana software was designed to answer them. Start with any one or any combination of Simpana modules and you've just laid the groundwork for an infinitely adaptable future. That's because adding functionality is as simple as "plugging in" another module. This gives you the capacity to control data growth, costs, and risks across enterprise data center, remote office, and workgroup deployments.

First step to our Solving Forward™ solution? Back up.

Most of our customers started with our backup software because their prior solution simply wasn't working. Backup is where CommVault started and we continue to outperform our competition today. But don't take our word for it. Visit **www.commvault.com** to read what Gartner, industry analysts, the press, and some of our 6500+ customers are saying about us. Then, contact us for an in-depth conversation about how we can fix your data management problems now and set you up far, far into the future with our Singular Information Management approach.

Once you experience the unparalleled capabilities of Simpana software, you'll quickly come to understand why it is, "The fastest-growing data management software you'll wish you'd heard of sooner."

www.commvault.com



DATA PROTECTION ► ARCHIVE ► REPLICATION ► RESOURCE MANAGEMENT ► SEARCH

©1999-2007 CommVault Systems, Inc. All rights reserved. CommVault, the "CV" logo, CommVault Systems, Solving Forward, SIM, Singular Information Management, Simpana, CommVault Galaxy, and QiNetix are trademarks or registered trademarks of CommVault Systems, Inc. All other third party brands, products, service names, trademarks, or registered service marks are the property of and used to identify the products or services of their respective owners. All specifications are subject to change without notice.

How to Make Nice

Win back estranged colleagues by reaching out and taking accountability for your actions



It's amazing how often executives are stymied by their inability to influence others. The typical scenario involves a talented, change-oriented leader who gets a shot at a more visible role. In the process of getting stuff done, he steps on a few (very influential) toes. The executive racks up some impressive accomplishments over time but finds his success is hindered by the organizational minefields his actions have sown. As a result, the executive tires of the effort required to move things forward and decides that it's time to move on.

Getting others to do what you want them to do because they want to do it is the ultimate test of leadership skill. It's hard to face the fact that others don't like working with you (and it always boils down to this very personal sentiment, doesn't it?) but once the tears, anger and denial are over, two questions remain: Is it too late to salvage these relationships, and how can I do that?

It's rarely too late to try again, although it does take time and effort because it's easier to create impressions than change them. Moving to a new company may seem like the answer, but the only way to put the issue to bed is by winning back those you've estranged. I have clients in this situation and, the fact is, they can change organizations but that won't change the outcome. No matter where they go, there they are; unless you change your behavior, you'll find yourself in a new place facing the same old problem.

It's easier to outline what to do than to muster the courage to get it done. The first steps require eating humble pie. Start by facing the truth of how your actions got you into trouble. Everybody tends to first place blame on others. Accepting accountability requires explaining the past without using the phrases "He said...", "She should...", "I told them...", "I tried..." and so on.

Next, reach out to would-be colleagues by communicating



What does it take to provide 360° communications in a 24/7 business world?

Expectations are high for communication systems in today's connected world. They are expected to deliver a lower cost of ownership while ensuring that people are available and have the tools necessary to collaborate. NEC, the global IT and networking company, delivers mobility and unified communications that integrate with our UNIVERGE® IP Telephony platforms, to improve business processes and customer relationships by connecting people to people and the information they need anytime, anywhere. NEC. **Empowering you through innovation.**

www.necus.com/necip



NEC is proud to have the No. 1 worldwide ranking in enterprise telephony extension line shipments in 2006, for the second year in a row, according to Gartner.*

Market Share: Enterprise Telephony Equipment Worldwide, 2006; Megan Fernandez & Isabel Montero, July, 2007 ©NEC Corporation 2007. NEC and the NEC logo are registered trademarks of NEC Corporation. Empowered by Innovation is a trademark of NEC Corporation.

Empowered by Innovation

NEC

three things. First, say that you are sorry for past actions. Tell them you want to restart the relationship, then ask for their help in doing so. The combination of apologizing and asking for help is powerful in that it disarms the listener and asks him to verbally (and therefore, psychologically) commit to being a partner in your success. If the other party is unwilling to let go of the past, focus your efforts elsewhere.

Finally, you need to learn how to understand and serve the needs of others in order to find the win-win solutions that define effective collaboration. To do so, you will need to:

Understand your stakeholders. Determine the motivators of key stakeholders by discovering their objectives, concerns and long-term goals. Learn to collaborate effectively by grasping their communication, decision making and conflict management styles using tools such as the Myers-Briggs Type Indicator.

Listen more empathetically. When people are emotional, they need to be heard. People hate know-it-alls who spout off with advice-giving statements that start with “you should...” or “you ought....” When approached with an issue, respond by reflecting the content and emotion of the other party two times (for example, “I bet it was frustrating when you worked so hard...”) before asking “when,” “what” and “how” questions to understand the situation further. Avoid “why” questions—they put others on the defensive. If conversations get heated, take a break and reconvene later—in person if possible.

Uncover underlying rationale. People tend to advocate their point of view (“We should use this vendor”) without offering a rationale regarding information and interpretations—particularly when they are emotional. Don’t counter with your own advocacy statements (“The current system can be enhanced...”). Instead, use inquiry to understand how they reached their conclusions (“What do the customers think?” “What are the key issues?”). Shift into productive advocacy once you have the facts by presenting your recommendation and rationale, and inviting critiques (“What am I missing?”).

Apply the psychology of persuasion. In his *Harvard Business Review* article, “Harnessing the Science of Persuasion,” Robert Cialdini outlines six psychological principles that help strengthen relationships. The principle of reciprocity, for example, outlines how important it is to give what you want to receive. What’s interesting is that you can compel others to repay in kind if, and only if, you give them something relevant in return and respond to their gratitude by saying, “I’m sure you would do the same for me” rather than with a “No problem” or “My pleasure.” The remaining principles—liking, social proof, consistency, authority and scarcity—are also useful to any leader.

My clients, like executives in similar circumstances, are stuck on first base due to the ego hit involved with taking accountability and asking others for help. Ultimately, they will be successful once they understand it is impossible to move on without staying put and delivering against the acid test of turning around negative impressions.

Reader Q&A

Q: One of my direct reports is very talented and should be in line for my job. However, he’s a bomb-thrower when it comes to working with others and defensive about his people skills, to boot. What strategies do you suggest for changing his behavior?

A: Defensive people need direct tactics. Conduct a qualitative 360-degree assessment by conducting interviews with his key stakeholders. The qualitative assessment will provide in-depth insights as to his bomb-throwing behaviors with examples that will be difficult for him to deny.

Before presenting the feedback, discover his career aspirations, values and motivators so that you can directly link the feedback to his aspirations and how he wants to live his life. Once he works through the feedback and demonstrates motivation to change, send him to an emotional-intelligence seminar so that he can understand the behaviors that he needs to work toward and then provide him on-the-spot feedback—both positive and negative—so that he can start to internalize the changes he needs to make.

Q: Why do some executives think that they can influence others by throwing their title around?

A: They understand that positional power can be very effective in gaining compliance—in the short term.

Q: Driving change does mean stepping on some toes. Should I worry about this as long as those at my level and above are satisfied with my results?

A: If your peers and superiors are happy with your results and the people below you are miserable, you

will have a hard time attracting and retaining people to work with you. Furthermore, you will limit your impact because

Have a Leadership Question?

For more reader **QUESTIONS** and answers from **SUSAN CRAMM**, visit www.cio.com/author/102853.

CIO.COM

those below you will “phone it in,” doing no more than necessary to get the job done. The job of a leader is to help others do more than what they believed possible, and this, of course, requires their enthusiastic participation. **CIO**

Susan Cramm is founder and president of Valuedance, an executive coaching firm in San Clemente, Calif. You can e-mail feedback to susan@valuedance.com.

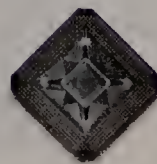
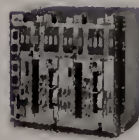
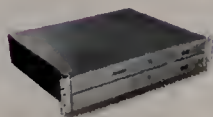
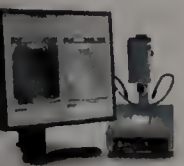




What happens when a technological achievement also happens to be a fashion statement?

Whether they are a strong message for brands in flagship stores, a bright centerpiece for high-end home entertainment systems, or an image carrier in business conference rooms and control centers, digital signage solutions from NEC, a global leader in IT and networking, offer professional-grade components and network connectivity that reflect a new age in visual communications – where style and substance converge. NEC. Empowering you through innovation.

www.necus.com/digitalsignage



IT SERVICES AND SOFTWARE ENTERPRISE NETWORKING AND COMPUTING SEMICONDUCTORS IMAGING AND DISPLAYS

Motivational Strategies

To develop a team that can compete in the future, you have to help its members define a role for themselves, and then give them the tools to get there

BY JOHN E. WEST



Five years ago, I rejoined the Department of Defense (DoD) High Performance Computing Center in Vicksburg, Miss., as its director. I had left two years before because I needed to have new experiences and because the organization was dominated by deep conflicts between the IT staff and its outsourced contractors. It doesn't take long for that stuff to wear you down. My own attitude had worsened to the point that I was becoming part of the problem. It was time to move on.

I had been an individual contributor with a minor leadership role: managing the small, in-house staff that oversaw the contractors. When the leadership of the supercomputing center's parent organization changed, I was asked by the director to return as the center's leader. I wasn't sure how it would turn out but I was eager to try to create something better.

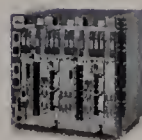
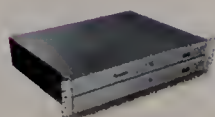
My team was full of talented, dedicated, hardworking people with gifts that had not been cultivated. Rather, as new tasks were assigned from the top, many staff members ended up with jobs for which they weren't well-suited. But reorganizing them wasn't enough. In the years before I left, we had spent a lot of time focused on the administrative activities endemic to large government programs and not enough time building teams or focusing on the future. When I came back, we were competing for funds, new projects and recognition with five other DoD supercomputing centers. Although historically we had been in a strong position to win new work, that was starting to change. Most of the team needed training in soft skills to help them communicate with each other and our business colleagues. I needed to turn 100 complainers, watchers and waiters into leaders.



Is your business prepared for catastrophic data loss? Are you prepared to save the day?

A revolutionary grid storage platform, HYDRAsstor ensures that you stay connected to vital information when disaster hits. The first unified disk storage platform optimized for backup and archive data on the same platform, HYDRAsstor cuts backup and restore time in half and reduces storage capacity requirements by 95% or more, compared with traditional systems. With HYDRAsstor, your information is protected and available fast, when you need it most. NEC. **Empowering you through innovation.**

www.necus.com/HYDRAsstor



IT SERVICES AND SOFTWARE ENTERPRISE NETWORKING AND COMPUTING SEMICONDUCTORS IMAGING AND DISPLAYS

Get Them Talking

The in-house and contractor teams had been long isolated by conflict. Each side had critical operational and technical information the other side needed, but the adversarial culture prevented the smooth flow of that information. Neither side felt involved in what the other was doing; neither side felt any responsibility for making the other side successful.

I instituted a series of regular tactical meetings at all levels, including daily and weekly operational meetings with the top leadership of the in-house and contractor staffs. I emphasized making daily decisions in the context of our long-term goals. We solved problems as a team, picking solutions based on merit rather than on which organization they came from.

This was an important step, as it was the first time in years that people had even been asked what needed fixing, let alone been given the opportunity to contribute to the solution. The youngest staff members were the quickest to respond. The veterans took longer to adapt. They wanted a better work environment as much as anyone, but they adopted a "trust but verify" attitude toward my leadership. To earn their trust, I made my decision making as transparent as I could. I also held myself accountable when things didn't go as planned.

Let Them Make Decisions

Empowerment is a horribly overused buzzword, and I didn't ever use it with my team (the veterans would have mutinied). But giving my staff the authority to make decisions about their

Inspiring the Troops

For more tips on motivation, read **STOP DEMOTIVATING ME!** at www.cio.com/article/123406.

CIO.com

work was the single most valuable thing I did to unlock the talent in my organization.

I knew these people were skilled and devoted. I also knew

that they were too reliant on a few leaders to make decisions. If we were to distinguish ourselves from our five sister centers, we needed everyone's input. But I couldn't just abandon the group to its own devices and expect good results. I needed to educate them about what was important to the organization and how to make decisions that supported our goals.

I began with my core leadership team. As we faced decisions, I would talk through my thought processes: what other organizations were doing, what our users wanted and what we had done before in similar situations. And I would always ask them what they thought we should do.

Each time we went through this, the team gained more experience in decision making and began to model the same behavior with their own teams. Today, even the most junior staff members are using this process to make decisions. As a result, the organization reacts much faster than before to changes in project requirements or business demands.

Teach Career Skills

The last big piece of the leadership puzzle was basic career skills: writing, speaking and career management.

In IT, we spend a lot of time on technical education but we don't spend time giving people the tools they'll need to succeed. Those who can teach themselves basic business skills or who have natural communication abilities are able to advance; those who don't, get stuck. This is like teaching people to mix colors and expecting them to paint like Rembrandt.

Giving my staff authority to make decisions unlocked the organization's talent.

Effective writing and good speaking skills are the easiest for your staff to learn. My first step was to demonstrate these skills myself. I made sure my writing, including e-mail, illustrated the easy, informative style I wanted my organization to adopt. I took the same approach to presentations and small group meetings. I also directed a portion of my organization's training budget toward formal training. One of the most significant results of this particular step was that we all developed a common vocabulary for communicating.

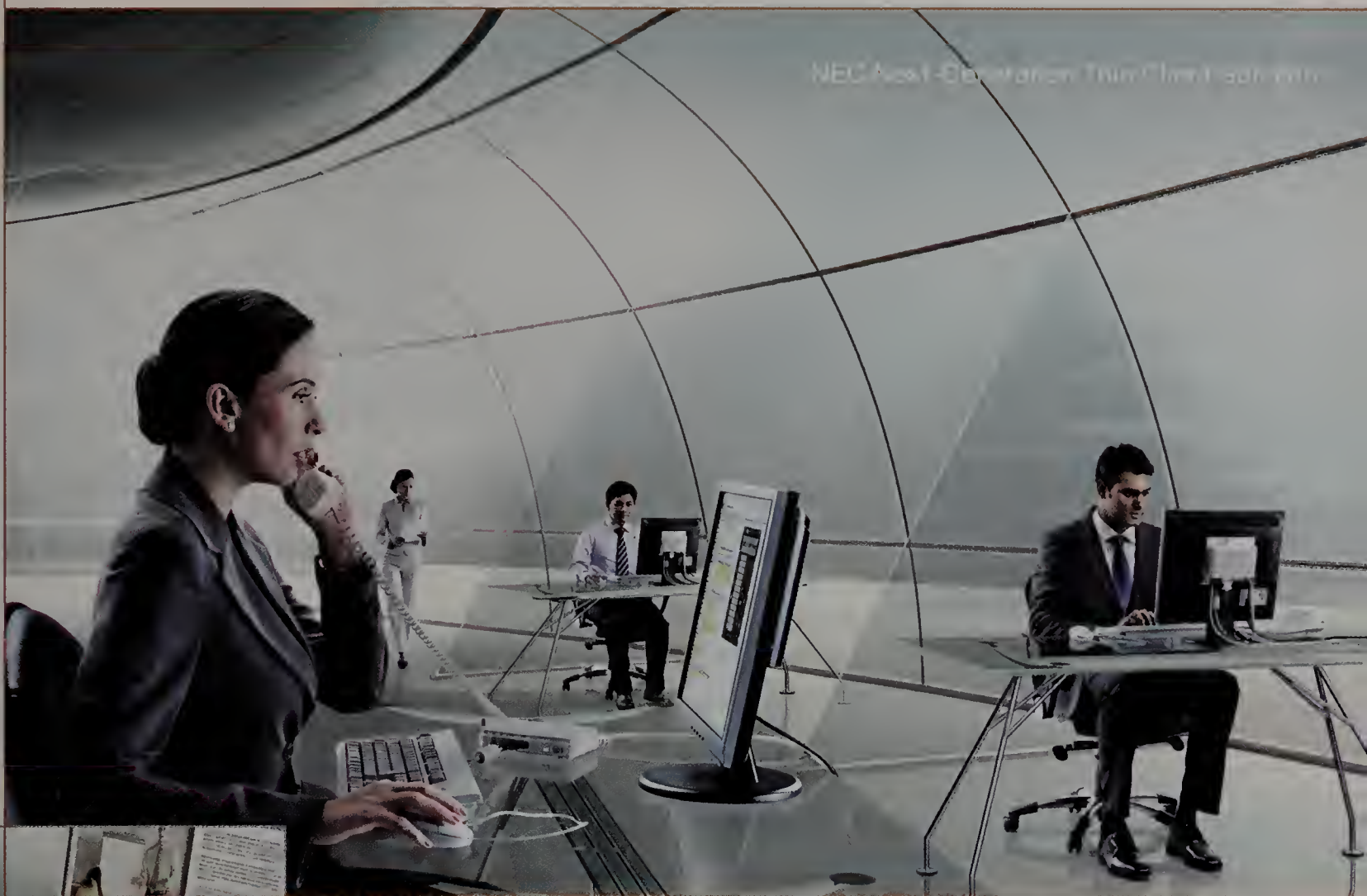
I also wanted each member of my team to have clear career goals and a plan to achieve them. I felt this would lead to more motivated employees who understood that what they were doing for the organization was good for them personally.

My approach is to work with my staff during performance reviews. I try to make all employees (especially the youngest) think about their next career step and assess whether the skills they're learning will get them there. We discuss career options, the assignments that will move them in various directions and the new skills they'll need. This conversation has led to more than one significant change in direction for members of my team. For example, in the course of reviewing one of my mid-level team members, we realized that after 10 years in one role, he wasn't challenged by or interested in his job anymore. Simply having the conversation was the stimulus he needed to move from an average-performing staffer to an energized leader in a new role on the technical staff.

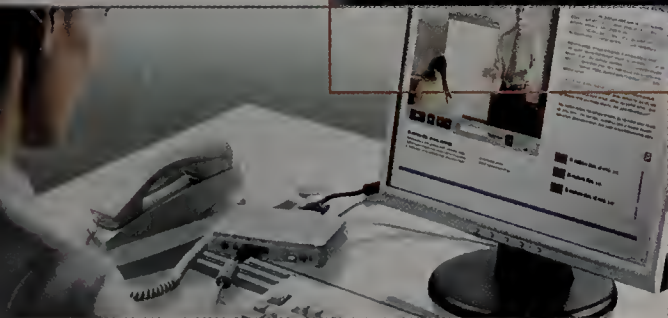
If you want to ensure that your organization continues to succeed over time, you need to get your team members to put themselves on a career path that they ultimately control. When they have their eyes on their own future, the future of your organization will be in good hands. **CIO**

John West is the director of the Department of Defense High Performance Computing Center at the U.S. Army Engineer Research and Development Center in Vicksburg, Miss. To comment on this article, go to letters@cio.com.





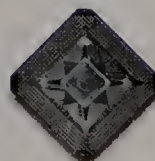
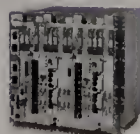
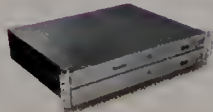
NEC Next-Generation Thin Client Technology



Our new innovation is so advanced, it's virtual.

The most valuable assets of your business will now be more secure, thanks to the next-generation Virtual PC Center from NEC, a global IT and networking leader. Our new virtual PC thin client system is designed to enhance PC data security, reduce total cost of ownership, increase user flexibility and simplify IT management - all while delivering multimedia support. NEC. **Empowering you through innovation.**

www.necus.com/vpcc



IT SERVICES AND SOFTWARE ENTERPRISE NETWORKING AND COMPUTING SEMICONDUCTORS IMAGING AND DISPLAYS

The Architected Business

Before you can deploy a service-oriented architecture, you have to understand your business model. For CIOs, the stakes have never been higher.



Most major organizations claim to have a service-oriented architecture (SOA) plan. Not to have one would be old-fashioned. However, successful implementation of end-to-end data and business processes integration requires not only a technology architecture but also a parallel business architecture. You simply can't have a modern business model without modern processes, software and infrastructure that are tightly integrated.

But in most enterprises, this integration between IT architecture and the business model remains poorly articulated. I call this the CEO/CIO dialogue gap. This gap exists to some extent because of the relative "newness" of IT as a discipline. Professions like finance and manufacturing have matured over hundreds of years, with principles, structures and a body of knowledge that are well understood by business leaders. However, IT has been part of the commercial landscape for only four decades.

During the last 10 years, some CEOs and CIOs have been able to close the dialogue gap. However, in today's flatter—even upside-down—world, competition is much harder and business moves much faster. In such exhilarating and dangerous times, strong leadership really matters. There's no longer any room for miscommunication between the business and IT.

Critical Alignment

The struggle for business/IT alignment is decades old. But today, the stakes are much higher because technology is becoming fully integrated into every facet of customer, supplier and employee interactions. The challenge for CIOs is multifaceted. First, they must grasp the competitive business context of their enterprise and understand the durable processes that drive



I SAID INTEROPERABILITY
SHOULDN'T BE MY PROBLEM.
NOW IT'S NOT.

INTEROP X ABILITY

DOWNLOAD THE
COLLABORATION
ROADMAP

It's the ability to have Microsoft® Windows Server® and SUSE® Linux Enterprise Server from Novell® work together. And the ability to not have to do it alone. It's Microsoft and Novell working together to help you reduce costs and complexity with new solutions for virtualization, directory integration, systems management, and office document translators—each with clearly defined intellectual property rights. So you can build your data center on your terms and simply have your world work the way it should.

Download the collaboration roadmap at www.moreinterop.com

Novell® **Microsoft®**

Copyright © 2007 Novell, Inc. and Microsoft Corporation. All Rights Reserved. Novell, the Novell logo and SUSE are registered trademarks of Novell, Inc. in the United States and other countries. Linux is a registered trademark of Linus Torvalds. Microsoft and Windows Server are trademarks of the Microsoft group of companies.

the business versus organization structures that are perishable. Then they must be able to build a multiyear modernization plan for the enterprise and establish governance structures with the executive team. Finally, CIOs must be able to articulate the value of the above to their business constituents.

This is a tall order, but it's critical for the success of a modern enterprise. In the past, we could get away with short-term commitments and less discipline because we were executing projects that were contained within a business function and limited to a specific technology. But today, most business processes require real-time integration of data and applications. If the business and IT integration model and investment strategy are not well-understood, aligned and managed, you could end up with poor business results, dissatisfied customers and out-of-control IT expenses.

For example, self-service processes that use real-time data require a rock-solid and secure infrastructure. This type of always-on business model built on SOA has become core to industries like airlines and banks. It has

an upside: Because there are fewer people between the customer and the service, service delivery costs are lower and the customer experience is more inviting. The downside is if your systems go down, service collapses and there are not as many

people to run interference on customers' behalf.

Similarly, a fully integrated global supply chain makes your company more efficient with lower fixed costs. But if it ever goes down, your product flow stops within hours because you've eliminated inventory at every level. There is both value and risk when technology is woven into the business fabric.

In addition, the always-on infrastructure is costly because of its intensity—the volume of transactions it has to support and the number of devices such as kiosks, PDAs and edge devices like RFID tags connected to it. The value of these investments needs to derive from reducing labor, improving customer service, gaining market share, or dramatically improving supply chain and operations productivity. In other words, your IT investments must be aligned with the economics of your business.

The Business-IT Architecture

There are time-honored principles for aligning IT with your company's economic model, starting with the business architecture. This business architecture includes:

- Industry context, consisting of the competitive landscape
- Business context, consisting of the company's approach to revenue growth, margin expansion, cash flow and quality
- The business model, which is how the company is organized and governed to deliver value

Most business processes require real-time integration of data and applications. If the business and IT integration model and investment strategy are not well-understood, you could end up with poor results and out-of-control IT expenses.

- Business processes, or how operations work end-to-end to deliver results

The IT architecture must be well-aligned with the business architecture and designed to deliver consistent quality over time. To do so, you must have an application and data architecture that is mapped to durable business processes and technology that is appropriate to the scale at which the company operates. In addition, the IT organization must reflect how the business is organized, and a governance process must be defined to manage investment decisions and trade-offs.

A good example of alignment between the business architecture and IT comes from my experience as CIO at Burlington Northern Santa Fe Railway in the mid-1990s. Our lessons there—managing in a rapidly changing competitive environment—remain true. The business leadership realized after deregulation of the railroad industry that its competitors were not the other railroads, but rather the trucking companies. Railroads historically moved coal and grain—commodities that were not schedule-dependent. Whether we delivered on a Monday or a Thursday didn't matter that much. Anything that was schedule-sensitive went to the truckers.

The competitive insight we had was that if you could run a high-velocity, reliably scheduled railroad, you could take back market share. That vision drove our subsequent investments in processes, organization and technology. In other words, the notion of building a 21st-century railroad led us to harmonize the business and IT architecture and our governance processes.

The keys to winning with IT today are no different than they were 40 years ago. You need to get alignment right, design the business and its technology with an end-state in mind and deliver capabilities in an evolutionary way. However, the speed of business has accelerated and the stakes are enormous. SOA-type implementations have increased the complexity and risk of IT. There are no silver bullets to slay these challenges, but there are great lessons and innovations. These are exciting times for our profession. **CIO**

Charlie Feld, a former CIO, is senior executive vice president of applications services with EDS. Contact him at charlie.feld@eds.com. To comment on this article, go to www.cio.com/article/121850.



SOA in Practice

Read an interview with CIO Andy Baer about **COMCAST'S SERVICE-ORIENTED ARCHITECTURE** at www.cio.com/article/121952.

CIO.COM

I Will...

Gain your **IT outsourcing** trust

Give you tier-one service quality at a tier-two price

Deliver what we promise, on time, on budget

Reduce costs and increase quality with our
Integrated Infrastructure Management™ solution

Make your IT processes and
business strategy work together

We have been accelerating the return on
our clients' IT investments for two decades,
and we have the clients, awards, recognition,
track record and growth to prove it.

Learn more at **compucom.com**.



CompuCom

IT Outsourcing Services • Application Services • Software Services • Hardware Services

Failure to Communicate

Understanding how the brain processes social cues can help you improve how you and your colleagues collaborate online



Two companies had formed a joint venture to develop a new telecommunications product. Engineers in both companies were hard at work, but the project itself was stalled.

The reason? A consultant we know diagnosed the problem this way: “Engineers on each side never saw each other,” he told us, let alone coordinated their work on the project. “The two sides just e-mailed their irritations to each other. They were having a flame war.”

Flaming, of course, refers to an e-mail message that comes across as rude or annoying, and a flame war happens when the recipient of such a message flames back, leading to an arms race of insult. Flaming is but one of numerous ways a lack of social intelligence can sabotage the use of technology, especially when it comes to working with others together online. Any IT manager takes a risk that a group’s efforts will falter if he ignores the psychological dimension of social computing.

Flaming is a symptom of a larger malady: an epidemic failure of social restraint. The same syndrome seems at work in bloggers who take a perverse glee in attacks and threats—who see Web rage as cool. In games like *The Sims* (an online role-playing environment), “griefers” are players whose goal is to ruin the experience for others. In chat rooms and on Listserv discussions, “trolls” take pleasure in baiting people into arguments that waste time and energy. And of course, no business environment would be complete without some opportunity for passive aggression, which may be expressed in a variety of ways, from answering a critical e-mail late (or never), or providing only partial or obtuse answers that force a questioner to re-ask her question in increasingly picayune detail.

DATACENTERS

BEWARE OF!

VOLUME 1 EDITION 1

ATTACK

OF THE

SPACE MONSTER



GET YOUR
LIMITED EDITION
SPACE MONSTER
BOBBLEHEAD

If your datacenter is bulging at the seams, we can help. We're **Digital Realty Trust**, the largest owner and operator of datacenters in the industry, with over 12 million square feet of facilities across the United States and Europe. We provide datacenter facility solutions ranging from move-in ready to build-to-suit. We can solve your datacenter space problems. Be one of the first 200 people to download our whitepaper, "Determining the Datacenter You Need" and receive a limited edition Space Monster bobble head, www.digitalrealtytrust.com/spacemonster



DIGITAL REALTY TRUST

Why People Are Rude Online

There is a technical name for this unsociable behavior in cyberspace: the online disinhibition effect. All cases of cyber-rudeness would be far less likely in face-to-face interaction, where subtle, mainly nonverbal cues help us govern our responses to others. Neuroscience diagnoses the mechanics behind flaming as a design flaw in the interface between the online world and the brain's circuits for reading and responding to another person.

When we talk in person, massive numbers of parallel neural circuits process emotional signals and let us decide instantly what to say or do. A crucial hub for this adaptive bit of empathy is the brain's orbitofrontal cortex, which both conducts this social scan and helps orchestrate our response so an interaction goes well. Patients with damage to this circuitry are unable to censor their unruly impulses—they will make mortifying gaffes or insult people. In essence, they flame while face-to-face.

For individuals with an orbitofrontal cortex that is operating normally, a fleeting frown or a lilt in tone of voice is the basis for "mind sight," which lets us sense what the other person feels and thinks. But short of a two-way webcam conversation, the online world lacks a channel for such cues from voice, facial expression and posture that the social brain needs to navigate well. Without those cues, we become "mind blind"—unable to sense what the other person thinks and feels—and thus more prone to send a response that seems "off."

The Costs of Mind Blindness

The cost of mind blindness isn't just measured in rude behavior—it also robs us of some of our most powerful tools for decision making. Consider asking a question in e-mail and getting back no as an answer. Does that no mean "my first answer is no, but I could be talked into it" or "absolutely not"? Face-to-face, we are able to read all kinds of nuances into seemingly concrete answers—we know a yes from a "yeah, sorta," and we can tell a maybe that means "I'm thinking about it" from a maybe that is just a polite refusal. Online, no is merely no, and considerably less informative as a result.

As with much about human social capability, the problem is magnified in group conversations. E-mail is a wonderful medium for distributed conversation but a terrible one for group decision making. Our mind blindness doesn't just deny us the ability to read the speaker, it takes away our ability to

read other listeners as well. This creates challenges for IT organizations that are trying to implement distributed collaboration environments.

Consider a group trying to arrive at a major decision

People communicate better when they are together, and they also communicate better online after they've spent some time one-on-one.

through e-mail. Were they together in a single room, the conversation would typically be accompanied by tiny head shakes and barely audible responses—the ahs and hmms and nuhs that we are instinctively adept at reading. Everyone would tacitly recognize when a consensus had been reached. Then someone would articulate that agreement to a medley of nods.

These moments are routine in meetings. But in virtual meetings such consensus can't be read. Lacking this signal to wrap up, an online discussion can be endless. Even worse, because the participants can't read the mood of the "room," the conversation ends up reflecting the interjections of the most frequent and forceful participants, rather than the overall judgment of the group, which is usually different from, and often better than, the judgment of the noisiest few.

There are, of course, ways we can add a bit of emotional nuance to our e-mail. Emoticons signal the emotion that goes with a message; inserting bracketed question marks to indicate uncertainty might be another. But yet there is no online convention that adds to e-mail anything near the full emotional undertones that a live voice or face offers. E-mail simply offers no substitute for the richness of a live encounter.

The solution to the telecom company engineers' flame war? Get them together in one room for a few days.

Although claims that telecommunications will replace travel have persisted ever since AT&T proposed the videophone in 1964, technology is a complement, rather than a substitute, to meeting face-to-face. People communicate better when they are together, and they also communicate better online after they've spent some time one-on-one.

When the engineers gathered, they got to know each other as people. They were no longer faceless entities lurking behind an e-mail address. They were able to establish ground rules for a respectful and productive discussion, whether face-to-face or online. Whenever they had the urge to send a flaming e-mail, they agreed to call each other on the phone and talk the problem over.

And their joint venture was completed successfully. **CIO**

Behave Better

Link to an audio download of Clay Shirky and Daniel Goleman explaining **WHY UNDERSTANDING THE BRAIN CAN IMPROVE COMMUNICATION** at www.cio.com/article/121550.

CIO.com

Daniel Goleman codirects the Consortium for Research on Emotional Intelligence in Organizations at Rutgers University. He can be reached at contact@danielgoleman.info. Clay Shirky is a consultant who teaches in NYU's graduate Interactive Telecommunications Program. Contact him at clay@shirky.com. To comment on this story, go to the online version at www.cio.com/article/121550.

METRICS

that MATTER

A CIO Dialogue on Business Continuity

CIO Publisher Gary Beach recently sat down to discuss business continuity with four noted leaders: Gene Doody, CIO, City of Richmond, Va.; Martin Gomberg, SVP/CIO A&E Television Network and The History Channel; Jane Lenz, manager of Business Continuity and Disaster Recovery, Amylin Pharmaceuticals; Belinda Wilson, executive director, Business Continuity Services, HP. Following is an excerpt from their discussion. The full webcast is available at www.cio.com/webcast/sponsored/hp/bc.



GARY BEACH: What do you see as some of the challenges that your customers have in getting involved with senior management?

BELINDA WILSON: My recommendation would be if you don't have senior management commitment, you may as well stop, because you will never be successful.

BEACH: Where does senior management begin?

WILSON: It begins in terms of commitment, sponsorship, funding. The ultimate in what we've seen is what I would consider best-in-class, are organizations [where] the senior-level management has built business continuity into their corporate culture. So, all of a sudden it becomes something that employees feel very prideful about, very protective about, and you need to make it at that level and get, again, as you mentioned, communicated down for it to really take off. And many years ago, the No. 1 reason business continuity failed was lack of senior management commitment. We're getting better at it. We get asked a lot, "How do we get their attention?" And I say, "Why don't you take their email away for an hour?" Trust me, they will want to know about business continuity. Because then you can say, "This was just a test to see."

If your competitor has had an issue, that is the best time to go take it to your senior management and say, "This could have been us. What if this was us?" You've got to strike when the iron's hot.

THE NATION'S MOST ELITE CIOs AND IT EXECUTIVES ATTEND CIO CONFERENCES. THE **THOUGHT LEADERSHIP SERIES** IS A SNAPSHOT OF A ROUNDTABLE WHERE THEY SHARE IDEAS, SUCCESSES AND STRATEGIES.

"You can have the best recovery strategy in the world, but if you execute poorly, it won't matter." — JANE LENZ

GENE DOODY: I know my mayor doesn't want to be the next mayor of New Orleans. It's probably a valuable lesson for us.

MARTIN GOMBERG: It's a language problem in that when you talk to technical people, and you talk about things like boxes and circuits and redundancy and capacity and all of those things, they get it. But turn to senior management and start talking about redundancy and availability capacity, and they're hearing something in Martian. You need to turn that into a discussion that they understand. When we talk about denial of markets, when we talk about denial of distribution, when we talk about loss of revenue, these are things that they get. I've been able to now convert this into a formula. It's resources, divided by consumption, equals the days of survival. And if you can actually get this down to an understanding of how many days my company can last, they get that.

BEACH: What metrics do you use at Amylin to measure the effectiveness of your business continuity/disaster recovery?

JANE LENZ: We utilize similar metrics, and we're trying very hard to both qualify and quantify the impact of the business interruption. We're doing a corporate-wide—right now as a matter of fact—refresher for business impact analysis throughout all of our various business units. And in doing that, one of the metrics that we're trying to come up with, as our company has been ever-changing, is a metric around what's the dollar loss.

"If you don't have senior management commitment, you may as well stop, because you will never be successful."
— BELINDA WILSON

Let's quantify what the dollar loss is. And then also we're looking at impact as far as reputation. Companies must be concerned about what their corporate reputation would take as far as a hit because of an event or the way it was handled. So, incident or crisis management is a very important component to a continuity program. Because you can have the best recovery strategy in the world, but if you execute poorly, it won't matter.

BEACH: Gene, what metrics do you use?

DOODY: Our No. 1 goal is to be able to make sure that those people that rely on us to sustain them are going to be able to do that. So, we start talking about metrics, you know, some of the things we're looking at are operational things. So, how are we going to make sure that we establish a mechanism for these people to get their money? The likelihood of a disaster is, can they show up somewhere or not? Is there transportation available? Depends on the type of disaster you're looking at.

We're an area subject to hurricanes, so if a hurricane comes through, there can be the potential that we may have to try to find a way to get to people. I think the most important one for us, as I talked about earlier, is financial, the idea of making sure that we're in a position where we've got some long-term sustaining mechanisms—you know, taxes and those types of things. More importantly, being strong enough to kind of survive that type of hit. And I think for us—and kind of looking at the type of experiences that we've had—we like to believe that if we can do it for six months, we can survive pretty much any disaster.



Want to hear more about Business Continuity? The conversation continues here
[\[www.cio.com/webcast/sponsored/hp/bc\]](http://www.cio.com/webcast/sponsored/hp/bc).

call for entries

Ones to Watch awards 2008

**We're looking for the
next generation of
standout IT leaders.**

Nominees should
currently be top IT
lieutenants—but not
yet full-fledged CIOs.

Visit www.cio.com/cio-awards/ones-to-watch/
today to apply.



Presented by *CIO* magazine and the CIO Executive Council



Business
Technology
Leadership

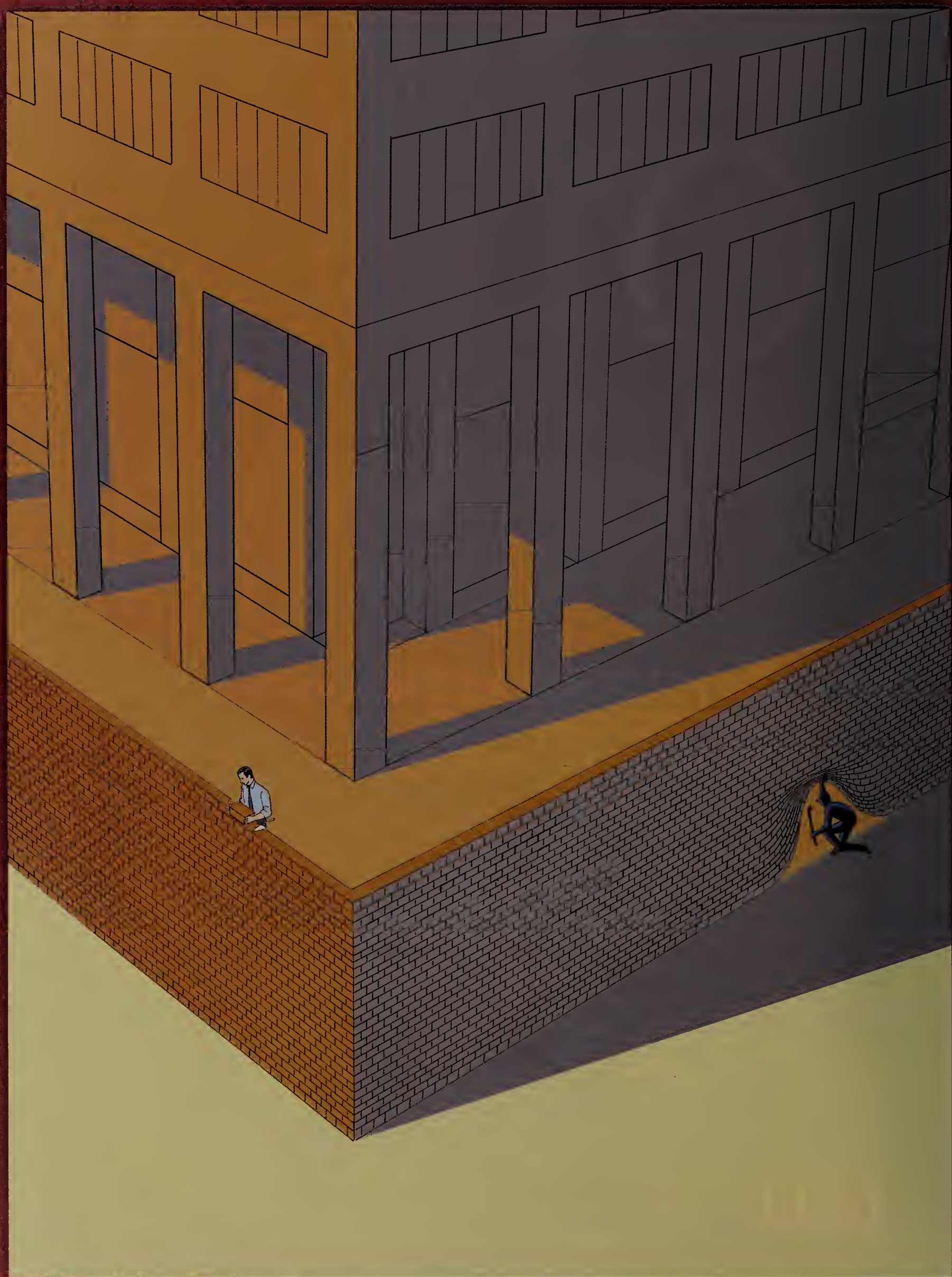
CIO Executive Council
The Professional Organization for CIOs

Apply Candidates will be nominated by their CIO based upon the characteristics identified in the application at www.cio.com/cio-awards/ones-to-watch/. Candidates may also nominate themselves or be nominated by another, but all nominations must be endorsed by a CIO.

A panel of leading CIOs will judge the nominees and choose the winners, who will be featured in a special May 2008 issue of *CIO*.

Be Seen Winners will also be honored at the fourth annual **CIO Leadership Conference** to take place May 18–20, 2008, at the Sheraton Boston Hotel.

Don't Be Late We will accept nominations from Sept. 1 through Nov. 16. For more about this prestigious award, go to www.cio.com/cio-awards/.



The 5th Annual GLOBAL
STATE of INFORMATION
SECURITY

The End of INNOCENCE

Five years ago, when CIO and PricewaterhouseCoopers collaborated on the first “Global State of Information Security” survey, very few people knew how bad the problem was. Now everyone knows. They just don’t know how to fix it.

BY SCOTT BERINATO

Awareness of the problematic nature of information security is approaching an all-time high. Out of every IT dollar spent, 15 cents goes to security. Security staff is being hired at an increasing rate. Surprisingly, however, enterprise security isn’t improving.

For the fifth straight year, CIO, CSO and PricewaterhouseCoopers (PWC) present select results and analysis from the “Global State of Information Security” survey, the world’s largest, most comprehensive annual information security survey.

And the first question to ask is, Are you feeling anxious?

Are you feeling the disquiet that comes from knowing there’s no reason why your company can’t be the next TJX? The angst of knowing that these modern plagues—these spam e-mails, these bots, these rootkits—will keep coming at you no matter how much time and money you spend trying to stop them? The chill that comes from knowing how much you don’t know?

Yeah, you’re feeling it.

You’re feeling it because you’re seeing it. According to the 2007 survey, a comprehensive canvassing

of 7,200 respondents on six continents, you see the information security problem more clearly than ever before. You’re seeing it because you’ve created tools and systems in order to see it. For example:

You’ve added processes. Three years ago, only 37 percent of companies reported having an overall security strategy. This year, 57 percent did. Also, nearly four out of five companies conducted enterprise risk assessments, at least periodically.

You’ve deployed technology. Nine out of 10 respondents said they use firewalls, monitor users and rely on intrusion detection infrastructure, and that number approached 98 percent when responses were limited to larger companies (more than \$1 billion in revenue). Encryption is at an all-time high, with 72 percent reporting some use of it (compared to 48 percent last year).

You’ve hired people. The number of CISOs and CSOs employed continues to rise. And the mean number of information security workers per company has topped 100, most likely due to more outsourcing and the use of contract employees.

You’ve crafted an infrastructure for understanding. You’re seeing it, and that’s why you’re feeling it. You’re undergo-

Reader ROI

- :: Why the security function is being reabsorbed into IT
- :: Why security needs to become proactive to reduce enterprise risk
- :: Why outsourcing to Latin America is a risky proposition

ing a shift from a somewhat blissful ignorance of the serious flaws in computer security to a largely depressing knowledge of them.

Awareness may be at an all-time high, but awareness doesn't equal improvement, and awareness doesn't bring happiness. The sad fact is that the strides made to date have not crossed the threshold from seeing to fixing.

"That next level of maturity has not been reached," says Mark Lobel, a principal with PWC's advisory services. "We have the technology but still don't have our hands around what's important and what we should be monitoring and protecting. Where's that console that says, 'Hey, credit card numbers are crossing the firewall and this is a PCI issue that has a real business impact?'"

Read on for more on what awareness has led to and other insights from the "Global State of Information Security 2007" survey.

"I See," Said the Blind Man

Five years ago, 36 percent of respondents to the "Global State of Information Security" survey reported that they had suffered zero security incidents. This year, that number was down to 22 percent.

Does this mean there are more incidents? We don't think so. We believe it simply means that more companies are aware of the incidents that they've always suffered but into which, until recently, they had no visibility. Those once inexplicable network outages are now known to be security incidents. Perhaps a spam outbreak wasn't considered a security incident before, but now that it can deliver malware, it is. Awareness is higher, and that's because companies have spent the past five years building an infrastructure that creates visibility into their security posture.

□ The Infrastructure Is in Place

Baseline deployment of people, process and technology continues to rise steadily, sometimes dramatically. Among those companies that don't have these techniques in place, the priority for adding it is remarkably low, indicating that most people who think they need these things now have them.

	2006	2007	PRIORITY FOR 2008
PEOPLE: YOU HAVE A...			
CSO	21%	28%	13%
CISO	22%	32%	17%
CPO	16%	22%	14%
PROCESSES: YOU HAVE...			
An overall security strategy	37%	57%	13%
A baseline for customers/partners	25%	42%	10%
Centralized SIM	34%	44%	11%
TECHNOLOGY: YOU DEPLOY...			
Firewalls	77%	93%	15%
Encryption	43%	72%	25%
IDS/A-V/other detection*	57%	90%	28%
Data backup	78%	82%	14%
User security/ID management*	73%	89%	33%
IPS/filters*	44%	83%	22%
Internet security*	31%	70%	14%

* Before 2007, these categories were not consolidated. The percentage listed is the highest percentage given for one of the subcategories now consolidated into the new category.

We've Seen the Enemy; It's You

This year marks the first time "employees" beat out "hackers" as the most likely source of a security incident. Executives in the security field, with the most visibility into incidents, were even more likely to name employees as the source.

□ Likely Sources of Incidents

Recognition of the insider threat is a sign that awareness is increasing, largely due to the controls that have been put in place over the past five years.

WHO ATTACKED US?	2006	2007	2007 SECURITY EXECUTIVES ONLY
Employee/former employee	51%	69%	84%
Hacker	54%	41%	40%

Have employees suddenly turned more malicious? Are inside jobs suddenly more fashionable and productive than they used to be? Probably not. Most security experts will tell you that the insider threat is relatively constant and is usually bigger than its victims suspect. None of us wants to think we've hired an untrustworthy person.

This spike in assigning the blame for breaches and attacks to employees is probably more like the dip in companies that report zero incidents—a reflection of awareness, of managers' ability to recognize what was always there but what they couldn't previously determine.

"What's happening is we're doing a better job with logging and understanding situations," says Ron Woerner, former information security manager at ConAgra Foods, now security engineering consultant at TD Ameritrade. "For a while, I think, ignorance was bliss. Now, with all the technology in place, we're learning that we all have the same problems."

Here's how building a security infrastructure can lead to more employees named as culprits in security incidents. A CISO is hired. He has the tools to investigate internal network anomalies and the authority to ask business unit leaders to provide him with information for an investigation. His deployment of user-monitoring tools helps him identify insider threats. Then he centralizes security information management software that automatically detects anomalous network behavior. Then maybe he adds a periodic risk assessment process (another trend on the rise, according to the survey) and suddenly his office is finding previously unknown vulnerabilities being exploited. Perhaps he adds an anonymous e-mail/hotline function for whistle-blowers. With all of this and more in place, a company has increased its odds of detecting security incidents.

But here's an odd paradox: Despite the massive buildup of people, process and technology during the past five years, and fewer people reporting zero incidents, 40 percent of respondents didn't know how many incidents they've suffered, up from 29 percent last year.

The rate of "Don't know" for the type of incident and the primary method used to attack also spiked.



Save Power. Save Space. Save Money. Save the Planet. (Be an IT Hero.)

See how Sun's new Eco Innovation Initiative can help you cut your energy costs by 60%, increase your server efficiency by as much as 85% and consolidate your data centers by up to 75%, all with a simple 3-step approach: assess, optimize and virtualize. With open source Solaris™, virtualization is free, making it easier for you to get maximum utilization of your resources. See how faster can be cooler, better can be cleaner and cheaper can be greener.

Good for your business. Good for our planet.

Get energy-efficient systems at sun.com/ecoinnovation.



What You Don't Know... Could Fill Volumes

□ I Dunno

Increasingly, those involved in information security reply "Don't know" when asked about the number and nature of security incidents.

	2006	2007	2007 CSO/ CISO
Number of incidents	29%	40%	29%
Type of attack	26%	45%	32%
Primary method used	26%	33%	20%

It doesn't bode well that after years of buying and installing systems and processes to improve security, close to half of the respondents didn't have a clue as to what was going on in their own enterprises. But when close to a third of CSOs and CISOs, who presumably should have the most insight into security incidents, said they don't know how many incidents they've suffered or how these incidents occurred, that's even worse.

The truth is, systems, processes, tools, hardware and software, and even knowledge and understanding only get you so far. As Woerner puts it, "When you gain visibility, you see that you can't see

all the potential problems. You see that maybe you were spending money securing the wrong things. You see that a good employee with good intentions who wants to take work home can become a security incident when he loses his laptop or puts data on his home computer. There's so much out there, it's overwhelming."

Woerner and others believe that the security discipline has so far been skewed toward technology—firewalls, ID management, intrusion detection—instead of risk analysis and proactive intelligence gathering.

If most of the investment has been put into technology, most of the return will come from there too. The tools will do their job. They will tell you what's happening and block the most ham-fisted attacks. But technology is largely reactive. It provides alarms and ex post facto reports of anomalies. Intrusion detection, for example, is not terribly effective at threat intelligence—understanding the nature of vulnerabilities before they affect you. All IDS boxes know is that some preset rule has been broken. Think of a glass break sensor on a window at a museum. That piece of technology is extremely effective at telling you that someone broke the window; it does nothing to explain how and why a painting was stolen, nor can it help you prevent the next window from being broken and the next painting from being snatched.

Furthermore, even a cursory look at security trends demonstrates that adversaries, be they disgruntled employees or hackers, have far more sophisticated tools than the ones that have been put in place to stop them. Antiforensics. Mass distribution of malware through compromised websites. Botnets. Keyloggers. Companies may have spent the past five years building up their security infrastructure, but so have the bad guys. Awareness includes a new level of understanding of how little you know about how the bad guys operate. As arms races go, the bad guys are way ahead.

Conventional Wisdom

Five truths that have emerged from five years of the "Global State of Information Security" survey

After five years of conducting the "Global State of Information Security" survey, we have noted some critical trends in information security. We've also uncovered non-trends—numbers that remain so constant and predictable that we can now call them conventional wisdom. Here, then, are five pieces of wisdom based on numbers in the survey that never seem to change.

Spending lags. You're always about 10 percent happier with security policy's alignment with the business than you are with security spending's alignment. Over the years, roughly 85 percent of you have said that your security policies are completely or somewhat aligned with the business, while just 75 percent said that about spending. After all, who doesn't want more money?

Partners too. You're more confident in your own security than that of your partners, suppliers and vendors. Once again, around 80 percent to 85 percent of you were either very or

somewhat confident in your security, but when you were asked about partners and vendors, the number dropped to between 70 percent and 75 percent. Remember, you're someone's partner and he's not too thrilled about you either.

Few are cocky. About one in 12 of you think very highly of yourselves. Since 2003, the number of respondents who claimed 100 percent of their users were in compliance with their security policies hovers around 8 percent.

Size doesn't matter. Company size does not affect spending. When the information security budget is measured as a percentage of the IT budget, it remains constant no matter how many employees a company has or what its revenues are. Size of company matters less in security spending than in industry. Technology companies spend the most; nonprofits and educational enterprises spend the least.

Banks lead. Financial services companies are attacked more but suffer less. Over the years, respondents in the money business have reported more security incidents without an appreciable increase in losses or downtime as a result. They do this despite not having significantly larger security budgets than others. The financial sector models best practices. See www.cio.com/article/11691/The_Global_State_of_Information_Security/5. —S.B.

Why You Have to Change Your Strategy

What can be done about all this? Be strategic. Security investment must shift from the technology-heavy, tactical operation it has been to date to an intelligence-centric, risk analysis and

Solaris™ is open source and free. It runs on IBM, HP (and Sun, too.)

With Solaris™, you can do a lot more. Add reliability and data integrity to your databases. Confidently deploy a secure, scalable Web infrastructure. Plus, you can run Solaris on over 880 x86 Platforms and still benefit from Sun's 24/7 world-class support.

Learn more, download or get your free DVD today at sun.com/getsolaris.
And join the Solaris open source project at opensolaris.org.



Elevate your Return on Outsourcing with a 360-degree View



Executive Summary:

Properly executed, an outsourcing relationship yields business benefits far beyond labor savings. An outsourcing partner can help an enterprise identify and act on additional objectives that must be measured in concert with cost savings to fully understand return on outsourcing (ROO). Read this white paper to learn

Why ROO is crucial for your organization

Which factors should be considered in your ROO analysis

How Cognizant's ROO methodology can help you make the right decision

Your company, like most, is probably working with various IT service firms on a wide array of IT projects. The reasons for outsourcing some elements of IT were fairly simple: too many requests and not enough talent and dollars to keep business-critical information seamlessly flowing across the enterprise. So you outsourced applications testing, maintenance or infrastructure management – IT's low-hanging fruit – to the lowest-cost provider.

It's been a few years since you signed on the bottom line, and you believe that these third parties are saving your company vast sums of money or that they are the

right strategic partners. In fact, you were so convinced that their armies of experienced IT professionals would deliver the cost-savings goods that you haven't really conducted a deep dive into the true returns of outsourcing since the contract was signed.

Enterprises worldwide and across every industry seek not only to contain IT costs but also to find ways to fill skills gaps that have undermined their ability to innovate.

The times they are a-changin'. Enterprises worldwide and across every industry seek not only to contain IT costs but also to find ways to fill skills gaps that have undermined their ability to innovate.

Historically, outsourcing IT was predicated on cost savings associated with labor arbitrage – supplementing internal IT staff with lower-cost programming and infrastructure management resources. Today's deals are different. As IT services firms have expanded their footprints with delivery centers on nearly every continent, they have expanded their domain and technology expertise across nearly every market segment. Aware of this brimming expertise, enterprises engage IT services companies to help build or extend applications for competitive advantage.

Empirical research underscores how outsourcing has become more than a cost savings game. Annual surveys conducted by Duke University show that although businesses continue to cite labor and other costs as the leading reasons for outsourcing, other factors are driving strategic IT services partnerships. Access to qualified personnel (up 26 percent since 2005), growth strategy (up 13.5 percent) and business process redesign (up 47 percent) are emerging as drivers in offshore outsourcing decisions.¹

One company that recently cemented its sourcing relationship to accelerate business innovation is Kimberly-Clark Corp., the \$17 billion Dallas-based consumer and health care products firm. Under a multiyear partnership, Cognizant, a global services provider based in Teaneck, New Jersey, will assume management of much of Kimberly-Clark's applications portfolio, according to Dennis Haltinner, director of strategy, architecture, innovation and compliance for Kimberly-Clark.

"There certainly is some cost savings potential, but we also looked for something that can give us more flexibility and allow us to move quickly into new directions and give us insight into the best practices in the industry," says Haltinner. "Really being intimate with our customers, growing the top line, driving innovation in our products – I want the retained IT organization to focus on those things. I want them sitting with the business units and driving our plans. I want Cognizant to worry about the rest."

To make the transition beyond labor arbitrage, however, enterprises need a clear, 360-degree view of outsourcing that extends beyond cost savings. Most enterprises, unfortunately, lack not only a solid sense of the cost of IT but

This special report is the first in a regular series dedicated to helping executives make informed choices about outsourcing by providing guidance on the tools and techniques they can use to evaluate their potential return on outsourcing.

Next installment: "How to Measure the Return on Outsourcing."

also how IT contributes to business objectives. Therefore, businesses need to conduct a return on outsourcing (ROO) analysis that defines initial cost savings and the business impact outsourcing has today and could have in the long term. An ROO analysis must draw on the experience and insight of a services provider to gain an independent, sweeping view of the underlying costs for delivering enterprise IT and the potential for savings and business gain.

"The ROO analysis helps not only to structure the outsourcing partnership but also to manage the relationship, guide any necessary course correction and measure the benefits over the years of the deal," says Malcolm Frank, senior vice president of Cognizant.

Today, it's all about infusion of IT talent, business and technology skills, relevant experiences and domain insights – an insourcing partnership – that can help the IT organization efficiently deliver services that meet or exceed today's business goals and anticipate tomorrow's requirements, Frank notes.

ROO is about measuring how a modern applications infrastructure can increase operational agility and how this translates into top-line gains that are unattainable. Moreover, it means being able to calculate the seemingly incalculable: the role your partner's best IT practices and domain expertise have in creating a flexible and formidable IT infrastructure. It also enables collaborative planning – adjusting your IT service partner's emphasis on certain projects and tactics – to drive even better business outcomes.

An ROO analysis can also identify the likely business benefit earlier in the engagement. It helps clients avoid predicaments that have dogged outsourcing deals in years past: the belated realization that an outsourcing partnership isn't delivering expected cost savings and operational improvements.

Cognizant can help a customer identify the benefits of an outsourcing partnership and execute an ROO analysis that will define the financial and operational benefits of outsourcing as well as the business value from a long-term relationship. The company achieves this with the aid of a proprietary methodology, benchmark data and an analytical tool that provides a baseline assessment of a client's spending and IT's alignment with business objectives. The tool is based on the vendor-independent Total Economic Impact™ methodology of Forrester Research, Inc., for comparing the current and projected performance of a client over time within its vertical industry or across industries and for understanding the best practices in IT service delivery.

The Cognizant Advantage

Leveraging over 13 years of experience in global IT service delivery to clients industrywide, Cognizant seamlessly

combines offshore development and local consulting to help clients execute their IT strategy and achieve desired outcomes. Unlike some offshore competitors, Cognizant establishes a close on-premises relationship with clients via its Two-in-a-Box™ model. With Two-in-a-Box, Cognizant embeds at the client site an experienced, dedicated relationship manager who is tasked with fully understanding the client's business and ensuring that the IT services strategy aligns tightly with organizational objectives. This relationship manager also works closely with Cognizant's delivery teams worldwide to ensure that the IT services are delivered on spec, on time and within budget, and are always in sync with the pulse of the organization. Cognizant's Transform While Perform (TwP)™ framework enables clients to first reduce operational costs by outsourcing noncore IT activities and to then apply the savings to driving top-line growth.

Forrester recently said of Cognizant, "Among leading Indian offshore firms, Cognizant received the highest overall grade for cultural fit while remaining price-competitive."²

An outsourcing decision, like any other key technology initiative, calls for a long-term analysis of business goals and of the impact of missed opportunities. Outsourcing provides operational efficiencies but also opens the door for optimizing IT resources that support business process renovations or innovations that boost the top line.

¹ "Next-Generation Offshoring: The Globalization of Innovation," Duke University/Archstone Consulting Offshoring Research Network 2004 and 2005 U.S. Surveys, and Duke University/Booz Allen Hamilton Offshoring Research Network 2006 U.S. Survey.

² "The Forrester Wave: North American Applications Outsourcing Q1 2007," Forrester Research, Inc., William Martorelli, March 2007.

Questions about ROO?

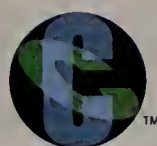
Send your query to
roo@cognizant.com.

We'll answer frequently
asked questions in a future
installment of this series.

About Cognizant

Headquartered in Teaneck, New Jersey, Cognizant is a leading provider of IT and business process outsourcing services. Focused on delivering strategic information technology solutions that address the complex business needs of its clients, Cognizant applies a unique on-site/offshore model to deliver applications management, development, integration, and reengineering; infrastructure management; business process outsourcing; and numerous related services, such as enterprise consulting, technology architecture, program management and change management.

For additional resources, visit www.cognizant.com/go/roo.



Cognizant

Passion for building stronger businesses

"We have to start addressing **the human element** of information security, not just the technological one."

—Ron Woerner, security engineering consultant, TD Ameritrade

mitigation philosophy.

Information and security executives should, for example, be putting their dollars into industry information sharing. "Collaboration is key," says Woerner. They should invest in security research and technical staff that can capture and dissect malware, and they should troll the Internet underground for the latest trends and leads. Dozens of security companies do just this and provide subscriptions to research services.

"We have to start addressing the human element of information security, not just the technological one," says Woerner. It's only then that companies will stop being punching bags. Only then will they be able to hit back.

IT Strikes Back

Speaking of striking back, the 2007 security survey shows a remarkable (some might say troubling) trend.

The IT department wants to control security again.

In the first year of collaboration on this survey (see www.cio.com/article/29841), CIO, CSO and PWC noted that the more confident a company was in its security, the less likely that company's security group reported to IT. Those companies also spent more on security.

The reason CIO and CSO have always advocated for the separation of IT and security is the classic fox-in-the-henhouse problem. To wit, if the CIO controls both a major project dedicated to the innovative use of IT and the security of that project—which might slow down the project and add to its cost—he's got a serious conflict of interest. In the 2003 survey, one CISO said that conflict "is just too much to overcome. Having the CISO report to IT, it's a death blow."

And every year after that, the trend was for the security function to gain increasing autonomy. More security executive positions were created. More decision-making power was shifted to security and away from IT. And more security groups reported to functions outside of IT, including the legal department, the risk department and, most significantly, the CEO. The trend was even more pronounced at large companies.

In 2007, this trend didn't slow down; it flipped. What's more, the reversal was most pronounced in the largest companies. For example, respondents chose from 12 possible functions to which their CISO could report. Those 12 functions were divided into three categories:

1. IT (CIO, CTO)
2. Neutral (board, CEO, CFO, COO, legal)
3. Security (CSO, risk, security committee, CPO, audit).

To allow respondents to select more than one of these answers, we created "shares"—the percentage of respondents with some reporting relationship to one of these three categories. Here are the results.

Reporting to IT

Respondents have some reporting relationship to the following groups

	2006	2007	2007 (>\$1B REVENUE)
IT	41%	53%	60%
Neutral	76%	79%	68%
Security	44%	46%	48%

A 12 percent rise in the number of security executives reporting to IT is hugely significant. And when you slice that by large companies, it's a 19 percent rise. Notice, too, that bigger companies show fewer information security executives reporting to neutral functions.

M. Eric Johnson, an economist who specializes in information security issues at Dartmouth College, says, "We actually analyzed the org charts, and the solid-line relationships are going back to IT and the CIO. CISOs have gobs of dotted line relationships, but IT is dominating reporting structures and the budgets."

Indeed, the trend is even more pronounced when you follow the money trail.

Security Dollars Come from IT

Funding for information security comes from (could check more than one)



Another hallmark of an evolved security function is its convergence with physical security, usually under a CSO. This makes sense both for operational efficiency and because threats are becoming more converged. Access control is a classic example of convergence paying dividends. By combining building access and network access in one system, you save money, improve efficiency and create a single view into both physical threats (illegal entry) and digital ones (illegal network access).

And for four years, convergence of physical and IT security steadily increased. Until this year.

Mid-Market Security

The mid-market has its unique challenges and it's increasingly being targeted by **ONLINE CRIMINALS**. Read all about it at www.cio.com/article/29098.

cio.com



How do you create a galaxy of project talent?



Promote project management credentials and a formal career path.

Project Management Institute helps you build strong teams and best business practices by certifying the experience and knowledge of your workforce. And our formal career paths help you retain and promote your brightest stars. A recognized way from the world's leading project management resource to increase productivity, efficiency and profitability.

Accelerate your business results with project management. Visit us at PMI.org/advantage.



Making project management indispensable for business results.®

CAPM® Certified Associate in Project Management ■ **PMP®** Project Management Professional ■ **PgMP®** Program Management Professional ■ **Career Framework**

And Furthermore...

More data points to ponder from the "Global State of Information Security" survey

"Uh, Boss? Can We Talk?"

Are security and IT communicating enough with the CEO? By comparing their answers, we find some startling disconnects.

What the Boss Thinks; What You Know

CEOs seem to think their enterprises are a lot more secure (and their employees more reliable) than CIOs and security leaders do. Conversely, CIOs and security leaders are a lot more optimistic about their budgets than are their CEOs.

	CEO	CIO	CISO/CSO/ INFOSEC DIR.
We've had fewer than 10 security incidents	74%	65%	53%
We've had an unknown number of incidents	18%	25%	28%
An employee or former employee was the source of the incident	44%	71%	83%
We do not conduct enterprise risk assessments	31%	21%	13%
Security spending will increase in '07	41%	53%	57%
Spending will stay the same	41%	32%	28%

We Need to Be But Are Not in Compliance With

Again, CEOs are far more confident than their CIOs and security execs that their enterprises are compliant. Either the CEOs are clueless, or the people who should know aren't telling.

	CEO	CIO	CISO/CSO/ INFOSEC DIR.
HIPAA	9%	14%	27%
Sarbanes-Oxley	9%	20%	32%
State privacy breach laws	10%	12%	21%

Privacy—Better, But...

Perhaps because of the sheer number of incidents involving privacy breaches, companies have improved their privacy practices. They are increasingly separating privacy from security and also separating security governance (which would take part in setting privacy policy) from tactical security. That means, for example, the people deploying monitoring tools aren't the ones setting the usage policy for those tools.

But more work needs to be done. Some of the key steps to ensuring data privacy—encrypting databases, classifying data by risk level—haven't become standard practice. The industry least likely to have adopted privacy practices is technology. A privacy leader? Consumer banking.

Who Wants to Know?

Privacy Best Practices

	EMPLOY CPO	SEPARATE PRIVACY & SECURITY	SEPARATE SECURITY GOV. & OPS.	CLASSIFY DATA BY RISK
Overall	22%	54%	66%	70%
>\$1B revenue	30%	66%	58%	79%
Financial services	33%	64%	60%	80%
Consumer financial	41%	69%	55%	90%
Retail	14%	51%	66%	58%
Health insurance	53%	73%	49%	81%
Healthcare provider	49%	72%	65%	64%
Technology	22%	49%	72%	77%

More on Privacy

While 60 percent of survey respondents posted privacy policies internally, only 24 percent posted policies on their external websites. Only 28 percent audited their privacy standards through a third party. Sounds like a cover-your-butt ploy; after all, if you don't have a policy posted, you can't be sued for violating or not living up to it. And if you haven't had your privacy audited, you don't have to fix all the problems an audit would find.

Respondents who do not keep an accurate inventory of user data: 69%

Respondents who do not keep an accurate inventory of where data is stored: 67%

Region of Risk

One of the areas of the world where the focus on information security has intensified is Latin America, specifically Brazil and Mexico. Researchers and law enforcement believe that cultural differences in acceptance of less-secure online transaction methods and fewer controls and regulations on banking activity have made the region the banking center of choice for the Internet criminal underground. Here are some select findings.

	INFOSEC BUDGET AS % OF I.T. BUDGET	DO NOT CONDUCT RISK ASSESSMENT	BUDGET WILL RISE MORE THAN 10% IN '07	>1 DAY DOWNTIME
Overall	15%	23%	20%	8%
U.S. and Canada	12%	19%	16%	7%
South America	19%	36%	30%	15%
Brazil	16%	43%	29%	21%
Mexico	21%	33%	28%	13%
China	19%	32%	26%	13%
India	21%	17%	33%	9%

Rising stars in IT are building business leadership skills with a new development program created by the **CIO Executive Council**.

Leadership Advancement Pathways offers 360-degree assessment tools, personalized action plans and CIO-led courses to help IT practitioners who want to:

- *Improve their executive leadership competencies
- *Meet the evolving demands on IT leadership
- *Make a meaningful contribution to the success of their business
- *Increase their career advancement potential

Take the first step in advancing your career.
Apply today at www.cioexecutivecouncil.com/pathways

CIO Executive Council
The Professional Organization for CIOs

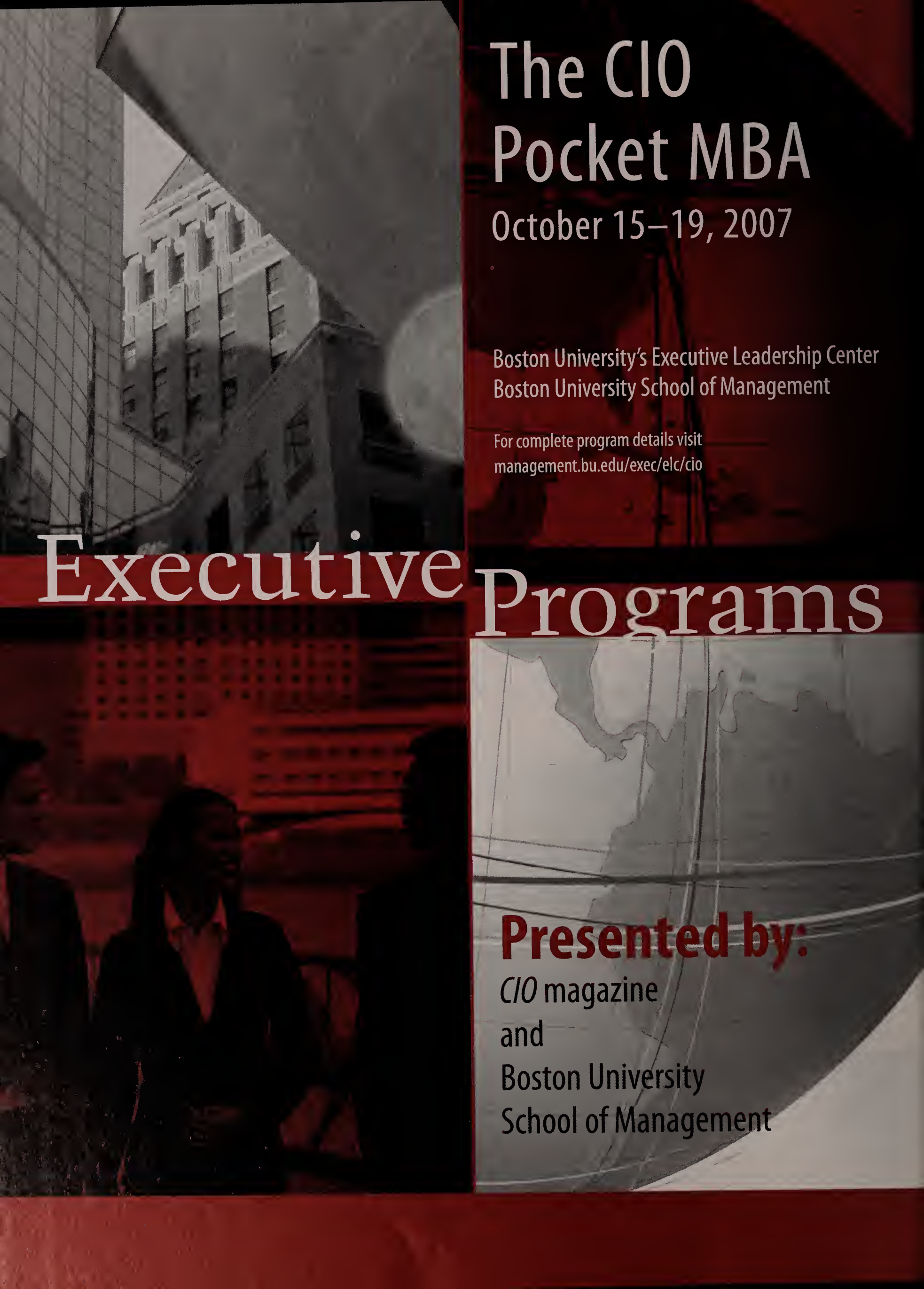
The CIO Executive Council was created by readers of *CIO* magazine and leaders within the community of CIOs to leverage the individual and collective strengths of its members to serve as unbiased and trusted advisors to each other, and to advance the CIO profession and its role in driving shareholder results for their respective organizations. In just three short years, the CIO Executive Council has grown to more than 480 CIOs worldwide, representing executive leadership in organizations with approximately \$2.5 trillion (USD) in annual revenues.

For information on membership, please visit www.cioexecutivecouncil.com.

Founded by



Business
Technology
Leadership



The CIO Pocket MBA

October 15–19, 2007

Boston University's Executive Leadership Center
Boston University School of Management

For complete program details visit
management.bu.edu/exec/elc/cio

Executive Programs

Presented by:

CIO magazine
and

Boston University
School of Management

Sessions Presented By

Commitment to Excellence
New Era In Collaboration
World-Class Education with
Real World Application

Boston University Scholars:

N. Venkat Venkatraman

and

John C. Henderson

and other distinguished faculty

Get the CIO Pocket MBA Advantage

- Curriculum developed and presented by world-renowned thought leaders from Boston University and in cooperation with *CIO* magazine
- Learn best practices from top global companies—learn from their successes in creating value through information systems
- Identify, weigh and communicate the strategic competitive advantages shaping information technology today
- Maximize your organization's current assets of information systems

Topics to include:

- The Network Era: Opportunities and Challenges
- Business Finance I: Analysis of Financial Statements
- Assessing the Strategic Landscape
- Business Finance II: Capital Budgeting
- Managing Disruption and Change
- Innovations at the Edge: The New Rules of the Game
- Implementation: Building a Strategy for Getting Things Done
- Leading Change Transformation

Register now as space is limited!

management.bu.edu/exec/elc/cio

Or contact us directly at:

Phone: 617-353-4248

Email: elc@management.bu.edu

The early registration discount rate for this program is \$4,245 if you register before September 14th. After September 14th the registration rate for this course is \$4,995.

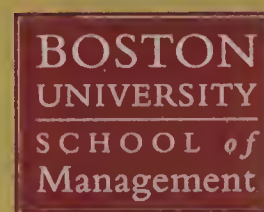
Boston University Executive Leadership Center
595 Commonwealth Avenue
Boston, MA 02215

Accommodations:

Hotel Commonwealth
500 Commonwealth Avenue
Boston, MA 02215



**Business
Technology
Leadership**



www.cio.com/conferences

Physical and Information Security Converge, Then Diverge

Information and physical security are separate

	OVERALL	REVENUE \$1B OR MORE
2003	71%	NA
2004	50%	NA
2005	47%	NA
2006	25%	36%
2007	46%	55%

Information and physical security report to the same executive leader

	OVERALL	REVENUE \$1B OR MORE
2003	11%	NA
2004	26%	22%
2005	31%	24%
2006	40%	33%
2007	34%	27%

Respondents who do not integrate physical and information security personnel: 69%

Of those, percent with no plans to integrate personnel: 80%

Who's in Charge?

Signs of IT's control and influence are peppered throughout the survey results. For example, when asked what security guidelines their companies followed, respondents were far more likely—sometimes two or three times more likely—to cite more general IT guidelines like ITIL than security-specific ones like SAS 70 and various ISO security standards.

What's going on here? Johnson has one theory: "Security seems to be following a trajectory similar to the quality movement 20 or 30 years ago, only with security it's happening much faster. During the quality movement, everyone created VPs of quality. They got CEO reporting status. But then in 10 years the position was gone or it was buried."

In the case of the quality movement, Johnson says, that may have

been partly because quality became ingrained, a corporate value, and it didn't need a separate executive. But the evidence in the survey suggests that security is neither ingrained nor valued. It's not even clear companies know where to put security, which would explain the "gobs of dotted line" reporting structures.

That brings us to another theory: organizational politics. What if separating security from IT were creating checks on software development (not a bad thing, from a security standpoint)? What if all this security awareness the survey has indicated actually exposed the typical IT department's insecure practices?

One way for IT to respond would be to attempt to defang security. Keep its enemy close. Pull the function back to where it can be better controlled.

"What I hear from CIOs," says Johnson, "is at the end of the day they're responsible for failures anyway. They're on the line whether security is separate or not." Why wouldn't the CIO want to control something he's ultimately responsible for?

On the other hand, maybe security was never as separate as it seemed. Companies created CISO-type positions but never gave them authority. "I continually see security people put in the position of fall guy," says Woerner of TD Ameritrade. "Maybe some of that separation was, subconsciously, creating a group to take the hit." Woerner also believes that the trend of the security budget folding into the IT department could be a direct result of security auditing that focuses primarily on infrastructure. That is, when auditors look at information security weaknesses, they recommend technological fixes. And IT buys the technology. Why should IT be charged for another department's expenses?

Whatever the reason, the trend is disturbing to some security professionals, especially at a time when they play an ever more central role in corporate crises, and in society in general.

The state of Internet security is eroding quickly. Trust in online transactions is evaporating and it will require strong security leadership for that trust to be restored. For the Internet to remain the juggernaut of commerce and productivity it has become will require more, not less, input from security.

But right when the best and brightest security minds are needed most, they're being valued less. **CIO**

Scott Berinato (sberinato@cxo.com) is executive editor of CSO.



METHODOLOGY The "Global State of Information Security 2007" survey, a worldwide study by CIO, CSO and PricewaterhouseCoopers, was conducted online from March 6, 2007, through May 4, 2007. Readers of CIO and CSO and clients of PricewaterhouseCoopers from around the globe were invited via e-mail to take the survey. The results shown in this report are based on the responses of 7,200 CEOs, CFOs, CIOs, CSOs, VPs and directors of IT and IS, and security and IT professionals from more than 100 countries. Thirty-six percent of the respondents were from North America, followed by Europe (28%), Asia (23%), South America (12%) and the Middle East and South Africa (2%). The margin of error for this study is +/- 1%.



FINANCE & IT

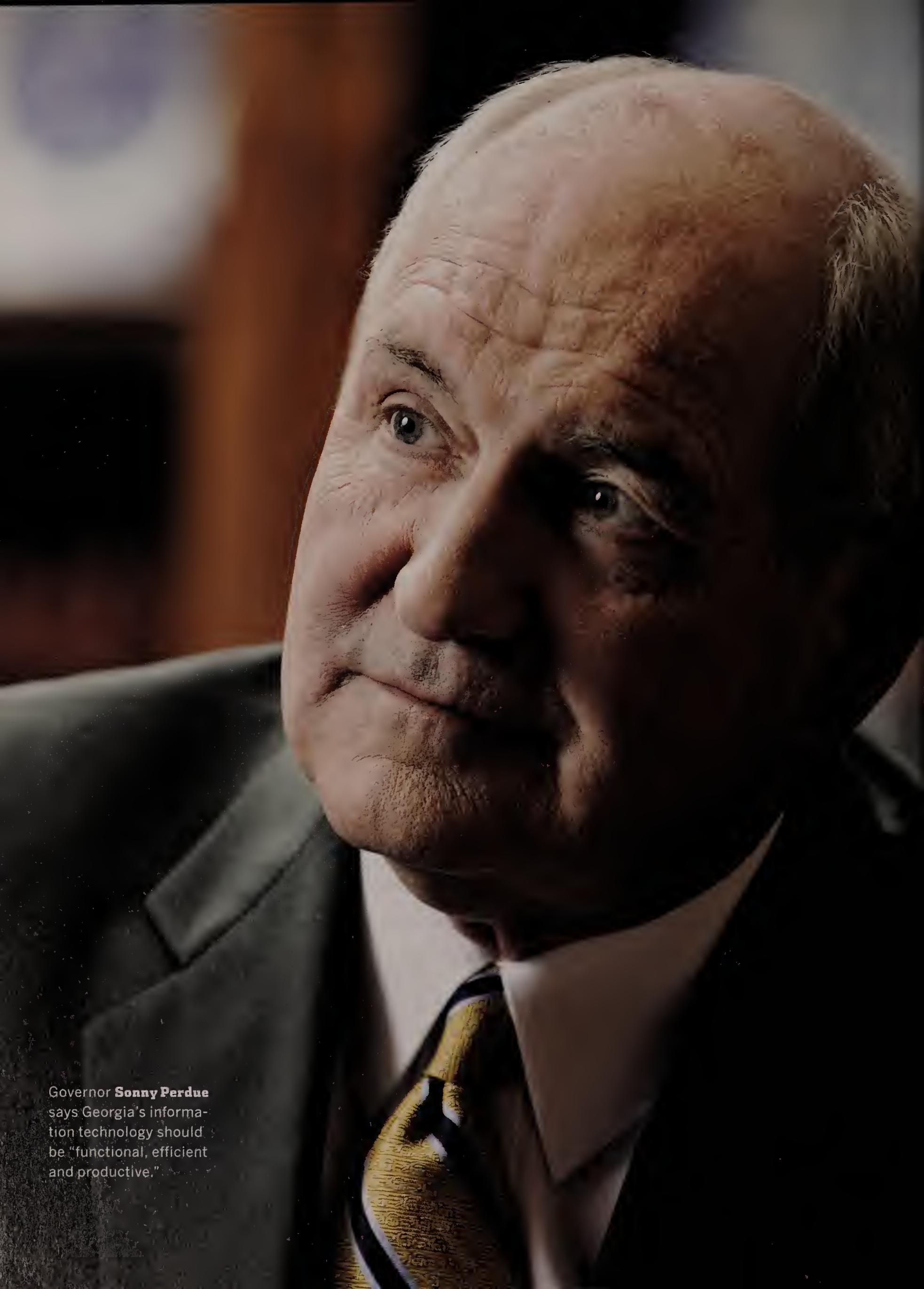
WORKING TOGETHER TO KEEP THE BAD GUYS OUT

TOSHIBA MFPs bring a perfect balance of security and affordability into the workplace. The folks in IT will love the new Smartcard technology because it ensures user authentication with an ID card. And the good people in finance will feel safe in knowing that Toshiba MFPs exceed all government mandates for controlling access and data integrity.

Talk about a secure relationship. Visit us at copiers.toshiba.com to download our white paper on security.

TOSHIBA
Leading Innovation >>>

secureMFP



Governor **Sonny Perdue** says Georgia's information technology should be "functional, efficient and productive."

As a small business owner, Georgia Gov. Sonny Perdue was an early adopter. But he won't deploy the latest technology for his state just because it's cool. It has to work for his constituents.

Georgia IT on His Mind

BY STEPHANIE OVERBY

Georgia Republican governor Sonny Perdue has been many things:

crop duster pilot, football quarterback, Air Force captain, veterinarian and agribusiness entrepreneur. He's also a bit of a geek.

As a veterinary student at the University of Georgia, Perdue loved physics but did most of his calculations on a slide rule. He didn't get his first electronic calculator until after he graduated in 1971, but once he got his hands on one, he was hooked. "I was just mesmerized by the power," says Perdue. Several years later, he set up his first client-server system for his own grain commodities business. The application that ran on the network was written in Unix, and the man who would become governor in 2003 quickly became proficient using the VI text editor.

Technology remains front and center for Perdue (now in his second term), who in his campaign promised to run Georgia like a business. Taxpayer demand for the public sector to use IT to improve its effectiveness, efficiency and openness has never been stronger, although there's debate in Georgia concerning Perdue's contributions to such change thus far. He says technology is the key to creating a state government that is "principle-centered, customer-friendly and results-driven." But although he sees himself as an early adopter, he says his gubernatorial role dictates that he approach new technologies as a "value-driven functionalist" concerned primarily with what works.

Perdue recently spoke with *CIO* Senior Editor Stephanie Overby about the power and limits of IT, why he chose a businessperson rather than a technologist for Georgia's CIO and why the private sector sometimes does a better job providing public services than the public sector.

CIO: You've been using computers as business tools for some 30 years. How do you feel about technology?

Gov. Sonny Perdue: I realized very quickly the power the personal computer could have. I also realized that we needed to share data within my business, so I was not for a standalone system.

“I wanted a business leader [to run IT] because the job is not simply about technology. Technology is the tool that we use for improving business processes and for business productivity. I don’t think you have to be a technologist to know what the application of technology to business processes can achieve.” –Georgia Gov. Sonny Perdue

Our first computer system was the Radio Shack Xenix multi-user system [Microsoft’s version of Unix], with dumb, green terminals connected to a central server. I think I ran my business for a number of years on, probably, a 100-meg hard disk. I actually became fairly proficient in VI and the visual editor for Unix and spent hours on the phone with a college in South Carolina playing around with how we could make our businesses more technologically proficient.

I remember when e-mail came along and we used it through the dial-up server at Georgia Tech. So I consider myself an early adopter. But I also want something to operate well. That doesn’t always mean having the latest, greatest toy.

What makes you think that running state government like a business is a good idea? And what role does IT play?

The primary business principle I wanted to bring [to state government] was fact-based decision making. Heretofore, I think our state had been run on a lot of emotional, political, “who’s-in-power” decisions rather than on data. I don’t consider myself particularly gifted from an intuitive standpoint. Therefore, I have to rely on data and facts to make decisions.

I look at data as a compass, not as a map. We know that we want a more educated, healthy, growing and safe state, but what are the data points that we need to achieve those things?

The metrics in our state were in very poor shape. The very fact that a state—a \$20 billion business—did not even know how many automobiles it had, who was driving them, what they were being used for; that we had no consolidated database of the property we owned...well, from the perspective of a CEO or manager, if you don’t know where your fixed assets are and what their return on investment is, you have no basis on which to make decisions for the future. I think that was a distinction I offered: a commitment to make decisions that would be customer-friendly, results-driven, data-driven and serve people.

Are there limits to your ability to run Georgia like a business, based on data?

We have to do some things for which there’s no profit incentive.

State of Georgia	
Capital	Atlanta
Industry	State government
2007 budget	\$18.7 billion
Employees	162,200
CIO	Patrick Moore, Executive Director, Georgia Technology Authority
IT employees	550
2007 IT budget	\$174 million

But I like to think there’s always a value incentive for our state and our citizens. The dividends may not be monetary. They may be better education, better infrastructure, better roads, better schools and better health care. Those are all value choices that depend on policy decisions based on good information. And how do you get that? You’ve got to have gauges—technological processes and procedures—in place where you can measure and manage where you are.

Can you share some specific examples of a problem in Georgia that had a technology-enabled solution?

One that we’re most proud of is an award-winning Web-based system, Georgia’s Building, Land and Lease Inventory of Property. It’s a Web-based GIS system that sorts information having to do with buildings, land and leases by many different data points (for instance, where the land that we own is, for what purpose it’s being used, cost per square foot). It’s been a huge resource by which we could improve our space management, to decide where our divergent group of operations needs to be and how we could provide synergy

in certain communities. In some counties we had 40 to 50-plus separate leases for different functions. This system gives us an opportunity to coordinate those, collaborate and, we believe, be more effective and efficient.

Let’s say that we have an agency that’s looking to lease a building in a particular area of Georgia. Our state property officers go to [the agency managers in] that county and say, ‘Were you aware that we already had 10,000 square feet of spare space down there?’ You use that data to make decisions about space management rather than doing things ad hoc.

Why wasn’t something like that put in place sooner?

Good question. Transparency of information has not always been fondly accepted in political environments. I believe if you’re going to run a government, the more information that’s out there, the more opportunity there is for doing better. Many times Republicans get accused of being more close-minded [about transparency]. But I’ve felt there are advantages in running a very transparent government, and technology is one of the ways you can be extremely transparent.

Need people
who know technology
that didn't exist yesterday?

What do you do?

Your industry can change from one day to the next. At Manpower Professional, our IT recruiters can help you find the highly skilled professionals you need to keep up with that change. Whether it's a permanent placement or contract assignment, a single network administrator or a whole team of business analysts. Discover what tomorrow will bring.

manpowerprofessional.com/next



Manpower
Professional

“Transparency of information has not always been fondly accepted in political environments. I believe if you’re going to run a government, the more information that’s out there, the more opportunity there is for doing better.” –Sonny Perdue

The Georgia Technology Authority (GTA), the state’s central IT organization, was created in 2000. What was your opinion of the GTA when you took office? Did you make any changes there?

I was in the state Senate and voted for it when it was created. I viewed it as an enterprisewide authority that could be an internal consultant for our agencies in areas of technology and how to be more productive. The real benefit of technology, I think, is productivity, and the GTA was created to get us all on some consistent standards and consistent platforms to manage the collective data that we had in the state, and to do that in a very safe, secure environment. When I became governor, I found that organization was morphing into more of an operational entity, doing some things that the private sector did well.

For example, GTA was responsible for all aspects of operating the state’s wide area network (WAN). It built and owned some of the infrastructure itself and leased other components from several different private-sector providers. Being able to finance upgrades to newer technology is just one of the challenges GTA faced. In 2004, GTA outsourced the state WAN to BellSouth (now AT&T). GTA can focus on vendor management of the WAN instead of service delivery. Its staff makes sure the service provider meets contractual obligations, and AT&T is responsible for delivering services and upgrading WAN technology.

The leadership I’ve placed over there now is Patrick Moore, a young man with an MBA from the University of Virginia that I’ve got a lot of confidence in. His core training is not in information technology. But he is an intuitive leader, a business analyst who has an enterprisewide vision of how the GTA can be the trusted internal resource to agencies for technology solutions.

The way I look at GTA is as somewhat of an IBM Solutions type

of agency for the state of Georgia, to help agencies think through their processes, to think through the operations that they need, to help them to define within the context of the state what is the best use of technology.

Why was it more important for the CIO to have business knowledge than to have technology knowledge?

I wanted a business leader there because the job is not simply about technology. Technology is the tool that we use for improving business processes and for business productivity. Both for learning to do the right things, which I define as effectiveness, and doing them in a way that provides the greatest value, which I think is efficiency.

I don’t think you have to be a technologist to know what the application of technology to business processes can achieve. It was Patrick’s ability to analyze, to assess, to prioritize and to have a business model for the future that impressed me. He has a vision to lead GTA not in a purely reactive mode, but in a very strategic fashion in order to build a long-term IT model for the state that would bring [its agencies] together, that would create the synergies that I think are available in an organization this size.

One of the challenges the public sector faces is keeping up with the pace of technology change. How important is it that Georgia stay current in terms of IT?

I don’t think we have to always have the latest, greatest, cutting-edge technology as long as what we’re using is functional, efficient and productive.

As rapidly as technology is changing nowadays, in an organization this size, you can spend most all of your time and most of your capital just retooling every few months to have the latest and greatest.

Fastest Growing Middleware

I think we have to do [big technology change] in stages. Training is a huge part of any deployment of new technology, and there has to be a certain total life cost that's amortized from a training perspective and from a utilization perspective, before we make decisions to move into the beta approach of any new technology. Oftentimes, we are probably not well-served by trying to be the first to test something.

As you say, you have to digest big projects in stages. What are some of the big projects being phased in right now?

We are just rolling out a project that was painfully slow and cost millions of dollars: our Statewide Automated Child Welfare Information Systems (Sacwis). Sacwis didn't even exist when I took office. There were several attempts to put a system in place dating back several years, but each one failed for a variety of reasons, most related to poor project management and problems with the procurement process. But it is a moral imperative. [A federal mandate also requires that all states develop a comprehensive automated case management tool to support state child protection workers.] We put a priority on it when we got here, we put project managers on there, and we believe we've got a good functioning system that we are rolling out statewide in a very aggressive fashion.

The other system, where there had also been some multimillion-dollar hiccups, is our student information system in our Department of Education. I believe, to do the right thing by our students, we need a good student information system. [The Georgia Statewide Student Information System assigns all students a unique identifier that allows the state to track their progress as they move from school to school and match their test scores to their records.]

This is one area I thought we were making great progress. But we've had some disappointing setbacks over the last year so we are going to put in more intensive project management. GTA has assumed a primary role in that project, where heretofore it was controlled by the Department of Education.

Someone has to own the project. Oftentimes we delegate these things down to a bureaucracy and no one is in charge. It's almost like building a house by committee: It would almost never get done.

Many states are trying to transform their IT organizations.

Some, like Michigan, are taking on the task themselves. Others, like Texas and Virginia, have brought in outsourcers. What is the right model for Georgia?

Georgia is better served with a balanced approach. I believe that GTA can be that internal consultant for IT solutions. From an operations standpoint, the private sector probably has the expertise and experience [to execute our ideas], as long as we know what we want. We do believe we have to retain some IT capability to make sure that we know what the capabilities of the technology are, so that we can put smart RFPs out on the street and so we can be very clear in communicating what our expectations are.

Frankly, I believe that public/private competition is perfectly OK. Whether our citizens can be better served by a public enterprise providing a service or by a private enterprise, they really don't care.

What do you think are the biggest challenges today facing the state generally and the GTA specifically?

Actually, it's a lack of rain; we're really dry.

Not much IT can do about that, I guess.

You never can know. But the challenge for the GTA, again, is to provide value to our citizens by using the tools of technology in a more productive way.

Your term will be up in 2010. In terms of the state and its effective use of technology, what would you like your legacy to be?

The only legacy I have is putting good people in place who have good judgment, who understand value, who understand how to improve processes. Even in administrative areas. How to cut out the fat and to provide enough lubricant in the [system] so that processes function together with as little friction as possible. **CIO**

Senior Editor Stephanie Overby can be reached at soverby@cio.com. To comment on this story, go to the online version at www.cio.com/article/128400.

What the Boss Wants

Find out **WHAT OTHER C-SUITE EXECUTIVES EXPECT FROM I.T.** at www.cio.com/article/121600.

CIO.com

Oracle Fusion Middleware

Hot-Pluggable. Comprehensive.

ORACLE®

oracle.com/goto/middleware
or call 1.800.ORACLE.1

The Collaboration Gap— AND HOW TO BRIDGE IT

ERIN GRIFFIN, CIO AND VICE PRESIDENT of IT at Loyola Marymount University (LMU) and Mitch Davis, CIO of Bowdoin College, met three summers ago at Snowmass, near Aspen, Colo., during a conference on academic computing. They chatted, shared experiences about their respective challenges and traded some ideas. But it didn't occur to either of them that they could join forces until they met up again in 2005 at the same conference.

They were leaving a session about disaster recovery, reflecting, Griffin remembers, that they were both in similar jams. Disaster recovery solutions from vendors were expensive—especially for small colleges (like LMU and Bowdoin) with limited budgets. Griffin and Davis joked about how easy it would be for people to replicate each other's data centers if only they were willing to work together. Then came the epiphany.

"We said, What if we actually did it?" Davis recalls. Half a year later, Griffin, who is based in Los Angeles, and Davis, in Brunswick, Maine, began developing a solution that allows them

to host each other's disaster recovery sites. And it has cost a mere fraction of what it would have to hire a vendor.

Samuel Gaer, executive VP and CIO of the New York Mercantile Exchange (Nymex), faced a different problem. A major competitor was encroaching on Nymex's market share by offering competing energy futures contracts on a "side by side" system for trading both securities and their options, while Nymex was still executing them manually (brokers screaming out orders in the trading pit) from its trading floor during daytime business hours. Gaer needed to get Nymex's contracts online in a hurry. Nymex had a system ready (ClearPort) that it had upgraded, but Gaer knew that the Chicago Mercantile Exchange (CME), which specializes in financial futures, had a well-es-

Everyone admits
that collaboration
for innovation is
good. It's also rare.
And when it works,
it's beautiful.

BY C.G. LYNCH

Reader ROI

- ∴ Where resistance to collaboration comes from
- ∴ How to define project metrics that make sense for both parties
- ∴ Why personal relationships are a critical success factor



Smart enough to
see it coming

ProCurve ProActive Defense allows you to detect, identify
and minimize threats before they compromise your network.

View our free video at www.procurve.com/prevention

Discover how ProCurve Networking by HP can help you handle today's
network security needs and adapt to tomorrow's security challenges.
For more information, call (800) 975-7684, ref. code prevention



— The leading **lifetime warranty** in the industry* —



*For as long as you own the product, with next-business-day advance replacement (available in most countries). The following products and their related family modules have a one-year warranty with extensions available: ProCurve Routing Switch 9300m Series, ProCurve Switch 8100fl Series, ProCurve Access Control Server 745w1 and ProCurve Network Access Controller 800. For details, refer to the ProCurve Software License, Warranty and Support booklet at <http://www.hp.com/rnd/support/warranty/understand>
© 2007 Hewlett-Packard Development Company, L.P.

lished electronic trading platform called Globex. "From a technical standpoint, our system was robust, but CME [and Globex] still had some distinct advantages," he says. For instance, Globex, which had been around since 1992, had been more heavily tested and as a result was more scalable. So Gaer swallowed hard and called CME COO Phupinder Gill to propose a partnership.

"I essentially said, 'Why should Nymex reinvent the wheel when we can collaborate?'" Gaer recounts. Working together over the next year, Nymex and CME came to an agreement that enabled Nymex to list its futures contracts on Globex.

The partnership helped extend CME's Globex platform, improving its customers' experience (many also did business with Nymex). For Nymex, trading volume in the crude oil futures it offered grew from 220,000 to more than 500,000 a day in 6 to 8 months.

The Collaboration Imperative

These efforts (for which Loyola Marymount and Nymex each received 2007 CIO 100 awards; go to www.cio.com/cio-100/2007/ for all the honorees) represent a growing trend among companies toward collaborating with industry peers. A global study by IBM of 765 CEOs last year revealed that more than 75 percent place a priority on partnering outside their organizations to create innovation. But there remains a collaboration gap, with only 50 percent actually reaching beyond their own enterprise to partner with another organization. That gap, the study concludes, represents an opportunity for CIOs to lead the way as facilitators of intercompany collaboration.

But assuming this role is a challenge for IT departments, which typically take pride in in-house innovation. "The role of the inventor is disappearing," says Navi Radjou, VP at Forrester Research. "They need to stop inventing and take on the role of...transforming raw technologies into a meaningful application for [the] business."

LMU and Nymex have reached out to transform the way business is done in their industries. In so doing, they're helping to define best practices for partnerships in business innovation.

How to Bring the Boss Along

Even though most CEOs might tell IBM's survey team that they would welcome external partnerships, they still have to be convinced that these partnerships with putative competitors are good for business. There are three factors that count with the boss: good timing, a solid ROI and an immediate business need.

Griffin and Davis conceived the disaster recovery plan for LMU and Bowdoin in 2005. They were still brainstorming when Hurricane Katrina devastated the Gulf Coast in August and forced colleges such as Tulane in New Orleans, to shut down. Disaster recovery became a hot topic. "All of a sudden people were interested in it," Griffin says. "So we took it to our senior administrations." Cost became the overriding factor, Bowdoin's Davis says. "I'd been thinking about what it would cost to do disaster recovery with a vendor—you just couldn't do it."

In the case of Nymex, CEO James Newsome was keenly aware that the company had put significant time and money into ClearPort. But in 2005 Nymex developers were still putting the system through its paces. So when Gaer made the case to collaborate with CME, he emphasized the benefits of speed and economics.

"I said that CME spent \$7 billion in seven years building a worldwide distribution market for Globex," says Gaer. "If we put our products on Globex," he argued, "then we'd have the immediate distribution we needed."

Words to Collaborate By

How two CIOs with separate collaboration experiences view partnerships

SAMUEL GAER, CIO, NEW YORK MERCANTILE EXCHANGE:

"I can code in seven different languages, but I'm a business guy." When Gaer proposed listing Nymex's energy futures contracts on the Globex platform run by the Chicago Mercantile Exchange, he told his boss: "This has nothing to do with a lack of faith in our abilities; this has everything to do with a forward-looking business relationship."

ERIN GRIFFIN, CIO, LOYOLA MARYMOUNT UNIVERSITY:

A successful collaboration pairs partners with complementary skills, says Griffin, and that's what she found with Bowdoin College CIO Mitch Davis. "Mitch is the king of the creative idea. I'm a process and planning person." Together, Davis and Griffin built a disaster recovery system for both schools. "Not only did our staffs have complementary skills," says Griffin, "we did as well."

—C.L.

Newsome bought Gaer's argument, acknowledging that the decision ultimately was about business, not technology.

There were some sticking points during negotiations. For example, Nymex worried about ceding some control over its technology to CME. In exchange, Nymex wanted CME to sign a noncompete agreement promising not to list futures contracts that resembled Nymex's. CME eventually agreed, and the deal went forward. (In June, the companies quashed rumors that they were discussing a merger after the Bloomberg news agency reported Nymex was exploring a sale with three potential partners, including CME. Executives from both companies said that they plan to continue their partnership as independent entities.)

How to Bring Your Staff Along

Once Gaer worked out the deal with CME, he had an ugly job ahead of him: telling his developers that their ClearPort platform was being shelved in favor of Globex. "It was one of the hardest things I had to do," he says. "We had our own system that we believed was bleeding edge. There was a lot of pride of ownership."

Gaer's problem was a common one, says Forrester's Radjou, as IT staff are urged to let go of their role as inventors. "You don't want them to think they're not good at what they're redoing," he says. Making

Panasonic recommends Windows Vista® Business.



LEGALLY, WE CANNOT SAY, IT'S THE EIGHTH WONDER OF THE WORLD.



PRESENTING THE NEW TOUGHBOOK 52. When you engineer a laptop as monumental as the new Panasonic Toughbook® 52, it's hard not to be reminded of the other great marvels of engineering throughout civilization. Like the pyramids, the Toughbook 52 was built to stand the test of time—it boasts a magnesium alloy case, shock-mounted hard drive and a spill-resistant keyboard. Factor in its carrying handle, 15.4" widescreen LCD and Verizon Wireless BroadbandAccess Built-In*, and it becomes the ultimate business tool for rugged, reliable and wireless mobile computing. And while we won't come right out and say that it's the eighth wonder, we will say it's turning heads.

panasonic.com/toughbook 1.800.662.3537

TOUGHBOOK®

THE RUGGED ORIGINAL.

Panasonic ideas for life

Intel, Intel logo, Intel Centrino, Intel Centrino logo, Intel Inside, Intel Inside logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Toughbook notebook PCs are covered by a 3-year limited warranty, parts and labor. To view the full text of the warranty, log on to panasonic.com/business/toughbook/support.asp. *Additional Verizon Wireless charges required for BroadbandAccess service. Please consult your Panasonic representative prior to purchase. ©2007 Panasonic Corporation of North America. All rights reserved. Eighth Wonder. H 7107-1

“As much as electronic collaboration is great, sometimes it helps to meet people face-to-face and get a sense of what kind of sushi they eat, or if they prefer Fenway Park or Dodger Stadium.”

—LOYOLA MARYMOUNT CIO ERIN GRIFFIN

sure that your IT staff is given ways to make valuable contributions to the project is critical.

The Nymex developers weren't blindsided by the news of the partnership (there had been rumors of the deal in the marketplace) but there were, Gaer believes, bruised egos. So in town hall meetings, he went out of his way to make it clear to the developers that their technological work was sound. Establishing that allowed him to explain the business imperatives.

Of course, not all the developers were convinced, so Gaer encouraged them to vent and to challenge him. “[I would] walk to the bottom of the floor and say, ‘Ask me what you want. Say the emperor has no clothes.’” He also established an open-door policy for his staff to speak with him privately if they didn't feel comfortable doing so in the town hall forum. Gaer believes that his openness and willingness to hear criticism helped the staff come to trust and get behind the decision.

Gaer and CME CIO and managing director Jim Krause also gave the Nymex IT department an active role in the Globex integration. While CME, which deals primarily in financial futures, wasn't new

to energy futures (it had once listed a few Nymex products), it still relied on Nymex IT's expertise to help with the migration.

Leverage Each Other's Strengths

After LMU and Bowdoin got their staff and leadership teams on board, the next step was to assess the strengths and weaknesses of each organization. The approach was simple: Figure out which organization was better versed in a particular technology and let that organization help the other implement it. Griffin and Davis's ultimate goal was to replicate each other's IT departments as much as possible—from their Web infrastructure to e-mail, to servers. By mirroring each other, they could easily take on each other's operations if a disaster occurred.

According to Griffin, Bowdoin had a good handle on VMware, but LMU had a better grip on Microsoft Exchange. So they helped each other deploy the technologies they knew best, mixing and matching until their IT departments were like twins. “Now you can go right down the list of places where we match,” Davis says.

The **bulletproof**
vest of the IT
action hero.

Metrics for Everyone's Success

Collaborating with partners in one's own industry often breaks new ground. Therefore, measuring outcomes can be difficult. "We were looking for measures of success, and we found that we sort of redefined them as we went along," says Griffin.

One way to ensure that a partnership succeeds is to mind your partner's goals. For example, while both LMU and Bowdoin wanted a new disaster recovery solution, they needed it for different reasons. Given Maine's rough winters, Bowdoin would need LMU's services frequently for short periods due to storms that cause power outages several times a season. LMU, on the other hand, would most likely need Bowdoin only in case of a large earthquake or terrorist attack. (The LMU campus is near Los Angeles International Airport, which has been targeted by terrorists in the past, including an attempt, thwarted by U.S. authorities, to bomb the airport on New Year's Eve 1999. (Snow storms, conversely, are rare in the L.A. area.)

The partners designed each other's emergency sites to reflect the frequency and magnitude of their needs. For instance, LMU would need the ability to conduct all classes remotely for several months in the event of a major disaster. As such, it would need to retain access to one semester of a fully populated course management system. Bowdoin, however, had no such need. Each scaled its storage plans accordingly.

If the CIOs in a partnership have a good relationship, their goodwill will trickle down to their teams. "We had mutual respect for each other, and I think that transferred quickly," says Bowdoin's Davis.

Gaer and Krause are friends and had worked together in the past. "That really helped—having the familiarity from a cultural as well as a technology level," Gaer says. As their teams got to know each other, they developed close relationships.

Griffin and Davis helped transfer the energy of their friendship to their teams by bringing their managers to Snowmass, the birthplace of the project. "We did some bonding over frisbee, golf, rafting and hiking," says Griffin. "As much as electronic collaboration is great, it helps to meet people face-to-face and get a sense of what kind of sushi they eat, or if they prefer Fenway Park or Dodger Stadium."

Griffin says that because collaboration with a peer organization is still a new concept, IT staffs tend to view it with caution. It takes enthusiastic leadership from the CIO—and a few gung-ho staff members—to get things moving. "There was some trepidation at first," Griffin says. "But I have a couple of people who saw this as exciting. Some-

times it takes a few people who look at the world differently to make a collaboration effort like this contagious." **CIO**

Associate Staff Writer C.G. Lynch can be reached at clynch@cio.com. To comment on this story, write to letters@cio.com.

Collaboration Theory

For another view on this topic, read an excerpt from **WIKINOMICS: HOW MASS COLLABORATION CHANGES EVERYTHING** at www.cio.com/article/28512.

CIO.COM

Some days, it feels like you're being hit from every angle.

The CEO wants the overall view of the business. The CFO wants the variance to plan. And half a dozen business managers want their reports. Now.

That's why you need Cognos. We are the experts in performance management, delivering the only complete system on a single software platform, including reporting, analysis, scorecarding, planning, and forecasting. It's highly intuitive, giving all your users easy access to information and total confidence in their decisions. Unlike SAP and Oracle, we have 17 years of proven performance management experience. And with over 23,000 satisfied customers, we know how to make you look like the hero you are.

Proceed with confidence. To find out more, visit www.cognos.com/actionhero today.

COGNOS®

THE NEXT LEVEL OF PERFORMANCE™

The Power of the Many

You've probably received an invite to LinkedIn, a popular corporate social networking site. Or maybe you've heard your teenage son or daughter talk about the coolness of Facebook or MySpace. Social networking—interactive, collaborative online communities created by technology—has certainly gone mainstream. And now it's becoming a value-added feature of the corporate landscape. Although social networking has raised security and liability concerns, CIOs in the Council are embracing it, even leveraging it, for its attendant benefits of collaboration, enterprise knowledge management and brand and mission extension.

Collaboration: Miley Ainsworth, director of IT innovation at FedEx Services, started using social networking principles in late 2006 as part of FedEx's internal innovation-focused website, Face Net (a play on Facebook). FedEx users enter areas of personal interest and expertise and then identify colleagues with similar entries. Users can join issue groups, collaborate on projects and even post video how-tos.

"Ideally, I'd like to have Face Net—and social networking in general—become an accepted part of doing business at FedEx," says Ainsworth, whose 40-member team includes four dedicated to social networking. To do so, Ainsworth knows that the user base must grow quickly. Participation

is encouraged through prizes like iPods and other gadgets.

Collaboration is also the payoff for Lockheed Martin. "We decided to respond to social networking using a martial arts philosophy—'go with the momentum'—and then use this momentum to encourage collaboration," says Joe



JOE CLEVELAND

Cleveland, Lockheed Martin's CIO and president of Enterprise Information Systems. "As the newer generation of workers started coming on the job, we saw how comfortable they were using instant messaging to bounce project ideas off each other. We also noticed that they were being quite effective and efficient," says Cleveland.

But along with collaboration came security, compliance and governance concerns. "For example, even something as simple as embedding a hyperlink in an instant message is problematic because hyperlinks can open attack vectors that include virus propagation, spyware infection and malicious code execution," says Cleveland. He updated security guidelines, set up training sessions to inform users about potential breaches and provided other IT support as needed. (See "Social Security," Page 80, for a list of CIO-suggested security measures.)

Cleveland says he has already seen positive results from social networking's

Continued on Page 80

[INNOVATION]

THEIR SPACE

It's easier to think outside the box when you're actually located...outside the box

Miley Ainsworth, director of IT innovation at FedEx Services, is in charge of social networking projects and researching other next-generation technology tools. Ainsworth and his 40-member team—four

of whom are dedicated to social networking—are housed at FedEx Labs in downtown Memphis, geographically separate from the rest of FedEx. The team sits on the third floor of a renovated 1900s furniture

warehouse on the Mississippi that some refer to as "California on the River," harking back to the days of innovation and dotcoms in Silicon Valley. The office space has easily configurable furniture, offices and cubes to encourage new ways of collaboration and work. There was even a rooftop view of the Memphis Triple-A baseball

affiliate (the Redbirds) for those who find inspiration in baseball, until construction blocked it. "The truly collaborative workspace helps to replace a more traditional mind-set; for us, the location breathes new ways of decision making and thinking—which is exactly what we are tasked to do," says Ainsworth.

—C.M.



Creating and migrating CDS
to the world's most advanced settlement
system with zero error. That's

certainty



Nowhere is the pace of change better understood than in global capital markets. CDS Clearing and Depository Services Inc. (CDS) aimed to build a trade settlement system that would be capable of meeting future standards. As one of the world's fastest growing technology and business solutions providers, Tata Consultancy Services (TCS) helped CDS to meet this challenge. TCS developed a highly automated system that not only slashed the trade settlement time but also dramatically reduced the overall cost of processing securities. Drawing on its global expertise, TCS helped CDS respond faster to markets, setting standards for one of the most sophisticated industries in the world. And of course, enabling CDS to experience certainty.

TATA CONSULTANCY SERVICES

Experience certainty.

IT Services ■ Business Solutions ■ Outsourcing

To learn how your business can experience certainty, visit www.tcs.com

[PEER COUNSEL]

Social Security

Joe Cleveland, Lockheed Martin's CIO and president of Enterprise Information Systems, has developed security guidelines for CIOs for keeping their social networking environment safe:

- ◆ **Educate** the user base on potential security issues
- ◆ **Monitor** the type of information being posted
- ◆ **Manage** access to the information
- ◆ **Define** processes for rules of engagement and complaints for various user communities
- ◆ **Employ** a strict Terms of Use agreement
- ◆ **Identify** a dedicated staff person as a single point of contact for community members
- ◆ **Log** all traffic
- ◆ **Create** storage guidelines and time frame for keeping data —C.M.

"I realized pretty quickly that all of this knowledge and work generated by social networking had to be identified and stored so it could be reused by other members of the team."

—LOCKHEED MARTIN CIO JOE CLEVELAND

Many Power

Continued from Page 78

real-time collaboration, especially in terms of reduced project cycle times.

Knowledge management: With all this collaboration, a lot of valuable knowledge is created and CIOs are focusing on how best to capture it. "I realized pretty quickly that all of this knowledge and work generated by social networking had to be identified and stored so that it could be reused by other members of the team," Cleveland says. A cross-functional knowledge-shar-

ing team, including 20 members from IT, is creating a knowledge management infrastructure so that the results of collaboration can be packaged for broader use across the organization. This year, they've been creating rules and processes to store, find and characterize information using tools such as pull-down menus and specific tags.

Kuljit Dharni, former director of architecture and development at Babson College, is leading a two-year social networking project called Digital Babson, which has a significant knowledge management component. "User-generated content is key to our project; the ability to quickly and accurately access this knowledge is a priority," says Dharni.

Brand extension: Marla Davidson, CIO and executive VP for strategy management at the Arthritis Foundation, is considering how social networking will impact her organization's mission, both in terms of identifying donors and providing programs to those with

arthritis. "We've realized that this isn't your father's donor pool anymore," she says. Personalized donor websites pushed out to networks of friends and families have become routine among nonprofits. But Davidson is also thinking about how social networking can lead to new

ways to do fund-raising and the issues that may arise. For example, she heard about an individual (outside of the Arthritis Foundation) who ran a fund-raising campaign on Second Life, an alternate Web society, and



MARLA
DAVIDSON

then cashed out the results into real dollars for the charity. Davidson believes such fund-raising behavior will only increase, so the foundation must be prepared.

Davidson and her Internet team created online communities of interest on the foundation's website organized by different types of arthritis and by native language. Although it's been successful, Davidson worries about liability issues associated with the health conversations taking place under the foundation banner. Members of the foundation's Internet staff monitor the discussions and offer comments and corrections if incorrect medical information is being passed along. With social networking, "you have to learn to be comfortable in a world where you don't know all of the answers and things are changing every day," says Davidson. **CIO**

Carrie Mathews is a program director at the CIO Executive Council. To comment on this article, e-mail letters@cio.com.

WHEN INFORMATION AVAILABILITY MATTERS



SunGard. Setting new standards for Information Availability by delivering a range of solutions that meet your specific availability objectives. Flexible enterprise wide solutions from IT management to AdvancedRecoverySM. 2,500 experts. Three decades of experience. 100% successful recovery track record.

To see how SunGard can help improve your IT availability stop by www.availability.sungard.com or call 800-871-5857 today.

SUNGARD[®] Keeping People
Availability Services and Information
Connected.

680 East Swedesford Road, Wayne PA 19087
800-468-7483 | www.availability.sungard.com

TO SEE THE TOP SEVEN ROADBLOCKS COMPANIES FACE IN ACHIEVING INFORMATION AVAILABILITY
AND FIND OUT HOW TO AVOID THEM VISIT WWW.AVAILABILITY.SUNGARD.COM/IA.



SALES AND SERVICES

CIO SALES OFFICES

President and CEO

Michael Friedenberg
508 935-4310

Publisher

Gary J. Beach
508 935-4202

VP, National Associate

Publisher

Bob Melk • 415 975-2685

EAST COAST

Regional Sales Manager

Ellie St. Louis
201 634-2332

Account Executive

Anna Mkrtchyan
201 634-2331

Senior Sales Associate

Norma Tamburrino
201 634-2329
Fax • 201 634-9513

NEW ENGLAND/CENTRAL

Regional Sales Manager

Brett Ferry • 508 935-4684

Sales Operations Manager

Dawn Cora
508 935-4092
Fax • 508 879-6063

SOUTHERN CALIFORNIA

Regional Sales Manager

Kevin Ebmeyer • 415 975-2684

WEST COAST

Regional Sales Managers

Kevin Ebmeyer
415 975-2684

Michelle Stutsman
415 975-2686

Account Executive

Derek Jung
415 975-2683
Fax • 415 543-2358

CUSTOM SOLUTIONS GROUP

Vice President

Matt Avery
508 935-4796

National Director, Sales

Adam Dennison
508 935-4087

Editorial Director

Jim Malone

Associate Editor

Anne Taylor

Senior Project Operations

Manager

Amy Greenleaf

Project Managers

Karen Capland,
Amy Freeman

ONLINE SALES

Vice President, Online Sales

Brian Glynn • 508 935-4586

Online Regional Sales Manager

Richard Hartman
508 935-4487

Online Regional Sales Manager, West Coast

Erika Karr
415 978-3329

Manager, Online Account Services

Danielle Tetreault
508 988-7969

Online Account Services Specialist

Valerie Sumner
508 988-7877

Online Advertising Specialist

Irina Gabechiia
508 935-4414

Online Ad Sales Associate

Devon Slattery
415 975-2687

Online Account Services Coordinator

Hayley Nickerson
508 988-7819

LIST SERVICES

Contact Paul Capone of IDG
List Services at 508 370-0865
or pcapone@idglist.com.

REPRINT SERVICES

For article reprints (100 quantity or more), please contact
Keith Williams at PARS International at 212 221-9595 x319
or via e-mail at keith.williams@parsintl.com.

CIO is published in the U.S. as well as in:

Australia, CIO Australia

www.idg.com.au

Canada, CIO Canada

cio.itworldcanada.com

China, CEO & CIO China

www.ceocio.com.cn

France, CIO France

www.idg.fr/cio

Germany, CIO Germany

www.cio.de

India, CIO India

91-80-521-0309/12

Japan, CIO Japan

www.idg.co.jp

The Netherlands,

CIO Netherlands

www.cio.nl

New Zealand, CIO New Zealand

www.idg.co.nz

Norway, CIO Business Standard

www.business-standard.no

Poland, CXO Poland

www.cxo.pl

Singapore, CIO ACEN/

Hong-Kong www.idg.com.sg

South Korea, CIO Korea

www.cio.seoul.kr

Sweden, CIO Sweden

www.cio.idg.se

For further sales information:

[www3.cio.com/marketing/
sales_contact.html](http://www3.cio.com/marketing/sales_contact.html)

CIO CONTACT INFORMATION

Editorial, Advertising and

Business Offices: CXO Media

Inc., 492 Old Connecticut Path,
P.O. Box 9208, Framingham, MA
01701-9208, 508 872-0080.

CIO (ISSN 0894-9301) is published semimonthly and as a combined issue Dec. 15/Jan. 1 by CXO Media Inc. Periodicals postage paid at Framingham, MA, and at additional mailing offices. Canada Publications Mail Agreement Number 1902075. CANADIAN POSTMASTER: Please return undeliverable copy to P.O. Box 1632, Windsor, ON N9A 7C9.

Permissions: Copyright 2007 by CXO Media Inc. All rights reserved. Reproduction of material appearing in CIO is forbidden without written permission. Send all requests to Yadira Pizarro, PARS International, 212 221-9595, Ext. 231, or yadira@parsintl.com.

Photocopy Rights: Permission to photocopy for internal or personal use or the internal or personal use of specific clients is granted by CIO for users through the Copyright Clearance Center, provided that a fee of \$3.50 per copy of the article is paid directly to Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01970. www.copyright.com. Please specify: ISSN 0894-9301. Permission to photocopy does not extend to contributed articles followed by this symbol: ‡.

Subscriptions: CIO is free to qualified information executives. To apply, use our online subscription form at www.subscribe.cio.com. Subscriptions are also available on a paid basis at a rate of \$95 for the United States and Canada, \$195 International (payable in U.S. funds only) and may be ordered online at www.subscribe.cio.com/services.html. Or address inquiries to CIO, P.O. Box 489, Northbrook, IL 60065-0489; 866 354-1125. Please allow four to six weeks for a new subscription to begin. The single copy price is \$9 for the United States and Canada, and \$15 International. Prepayment is required, payable in U.S. funds.

Change of Address: Please go to www.ameda.com/custsrv/cio and follow the online instructions.

Postmaster: Send change of address to CIO, P.O. Box 489, Northbrook, IL 60065-9816. Printed in the U.S.A.

INDEX OF COMPANIES AND ADVERTISERS

Page numbers refer to the first page of the article(s) in which the company has a substantial mention.

This index is provided as a service to readers. The publisher does not assume any liability for errors or omissions.

COMPANY INDEX

American International Group Inc. 19
Apple Inc. 19
Arthritis Foundation 78
AT&T Knowledge Ventures 10, 46, 66
Babson College 78
Berkeley College 10
BNSF Railway Co. 42
Centerview Partners LLC 19
Champion Technologies Inc. 27
Chicago Mercantile Exchange 72
ConAgra Foods Inc. 50
Dartmouth College 50
DataCore Technology Inc. 27
Deloitte Development LLC 19
Facebook 78
FalconStor Software 27
Fedex 78
Forrester Research Inc. 27, 72
GlassHouse Technologies Inc. 27
Google Inc. 19
IBM Corp. 27, 50, 72
InnoCentive Inc. 10
Leo A Daly 27
LinkedIn Corp. 78
Lockheed Martin Corp. 78
Los Angeles World Airports 72
Loyola Marymount University 72

MIT 84
MySpace.com 78
Network Appliance Inc. 27
New York Mercantile Exchange 72
PG&E Corp. 8
PHNS 27
PricewaterhouseCoopers 50
Procter & Gamble 10, 19
Radio Shack Corp. 66
Rutgers University 46
Sophos Plc. 19
The Boston Consulting Group 19
U.S. Department of Defense 38
University of Georgia 66
Wasatch Computer Technology 27
Wikia Inc. 19
Wikimedia Foundation Inc. 19

ADVERTISER INDEX

3PAR 26
Alcatel-Lucent 9
Canon U.S.A. Inc. 2
CDW Corp. 21
Cognizant Technology Solutions 56
Cognos Inc. 76
CommVault 12, 32
CompuCom Systems Inc. 45

CA C4
CXO Media Inc. 25, 49, 61, 83
Digital Reality Trust 47
Fujitsu 11
Hewlett-Packard Co. 7, 48a, 73
IBM Corp. (regional) 62
Insight Direct USA Inc. 4
Intel Corp. C2
(ISC)² C3
Manpower Professional 69
Microsoft Corp. 16, 29
Microsoft and Novell 43
Motorola Inc. (regional) 60a
NEC Corp. 35, 37, 39, 41
Novell Inc. 24a
Oracle Corp. 70
Panasonic Corp. 75
Project Management Institute Inc. 59
RSA Security Inc. 30, 31
SAS 18
Sun Microsystems Inc. 53, 55
SunGard Availability Services Inc. 81
Tata Consultancy Services Ltd. 79
TEKsystems 14, 15
Toshiba America Business
Solutions Inc. 65
Unisys Corp. 23

CIO's e-Mail Newsletters

The Updated Management & Enterprise Information You Want

Delivered right to your desktop

It's the best way to keep one step ahead of the competition.

- ☒ **CIO Blogs**
This week's top blog postings.
- ☒ **CIO Careers**
Advice for your career plus job postings.
- ☒ **CIO Enterprise**
Enterprise-level technology information, news and tools.
- ☒ **CIO ERP**
A CIO's monthly guide for enterprise resource planning.
- ☒ **CIO Information Security**
Security information and news the CIO needs to know about.
- ☒ **CIO Insider**
Your guide to the latest from CIO.com.
- ☒ **CIO Leader**
Updates, insights and advice from CIO.com on hiring, firing and inspiring.
- ☒ **CIO Magazine Tech Poll**
Results of our quarterly survey, covering IT's overall health as well as spending and trends.
- ☒ **CIO News Watch**
The week's top news stories.
- ☒ **CIO Open Source**
A monthly peek at what's happening in the open source realm.
- ☒ **CIO Research Update**
Highlights of CIO's most recent IT research.
- ☒ **CIO SOA**
Your resource for service-oriented and enterprise architecture.
- ☒ **CIO Whitepapers**
Your guide to new and upcoming whitepapers.
- ☒ **CIO Wireless**
Providing information on emerging wireless technologies and infrastructure.

Sign up now for CIO's COMPLIMENTARY e-mail newsletters
www.cio.com/newsletters



Business Technology Leadership

5

Things I've Learned

THE VOICE OF EXPERIENCE * AS TOLD TO KATHERINE WALSH

Harvard Business School Professor **John Kotter** is a top authority on leadership and change. However, he says coping with personal change isn't always easy.

I personally admire Jack Welch as a change leader.

I've learned many lessons from him. He said "the world is moving in nanoseconds," so you better be sure you're good at change. He also talked about how "incremental change can easily be resisted by a bureaucracy." Constant baby-step improvement is fine, but it is not enough. Sometimes sweeping change is what you need. It's what leaders do.

The more adaptable you are, the better.

I've found that the more adaptable organizations are to change, the better they can

sustain high performance over time. There is a definitive relationship between leadership and change, which is how I got into this research in the first place. I was physics major at MIT. I got into electrical engineering and finally labor economics, followed by business school and a focus on organizational psychology. During my research I began to see a relationship between performance and change. Companies that were better at change were performing better over time. And they had better leadership.

The basics of leading change are a function of human nature.

I've found there are specific steps in the process of how people make significant changes. They are universal, independent of the content. They apply to process reengineering, innovation, new business strategies, you name it.

These eight steps are to create a sense of urgency, put the right team together, create a sensible change in vision and strategy, communicate the plan to obtain buy-in, empower people

to act, garner short-term wins, pound away at the changes until you can implement them and then make them stick. That process is at the heart of leading change.

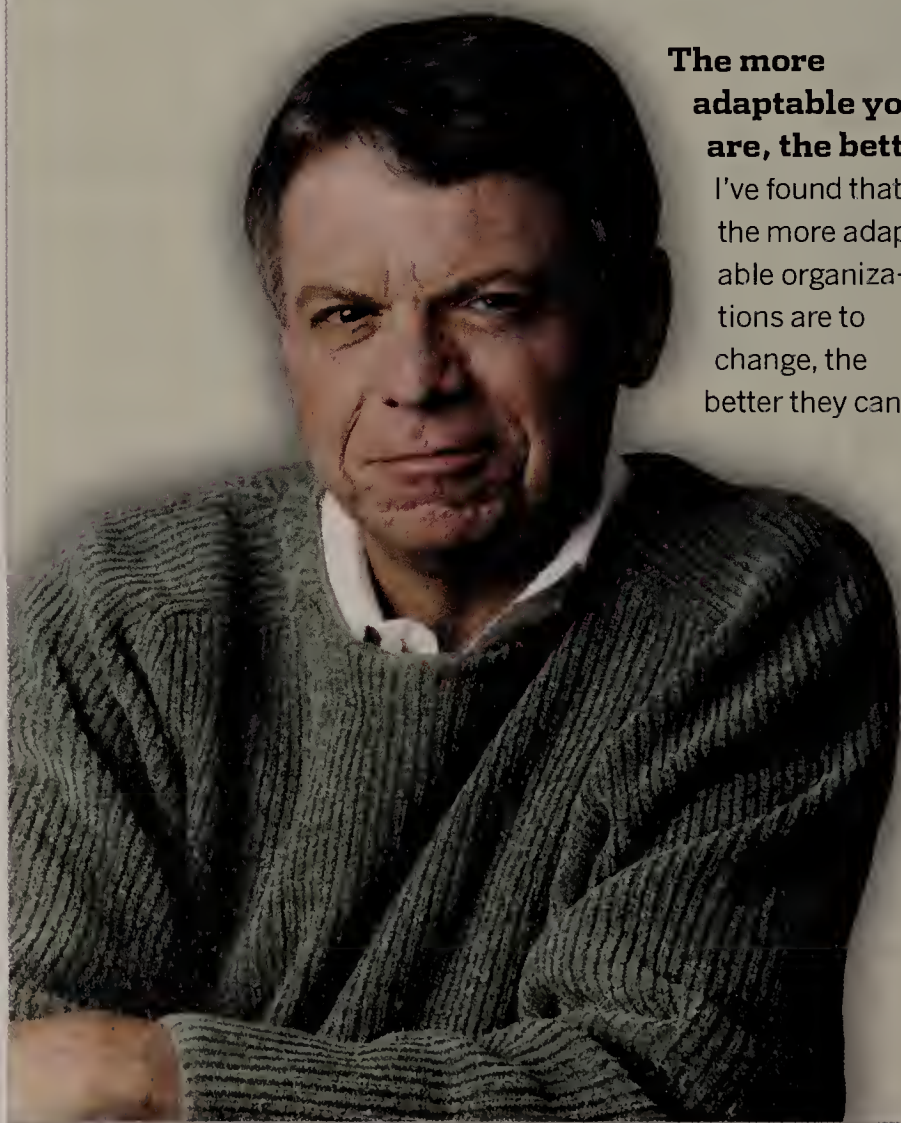
Details of leadership are situational.

As situations change culturally, and through time, successful leadership styles change, too. If you look at the people today who are providing terrific leadership in their organizations, some of the things they're doing are different from their 1950s counterparts. Today there is more diversity in terms of gender, ethnic background and race.

I've led change in my own career.

So I can say that if you don't know how to do it, good luck! The better you are at identifying the right steps, the higher your chance of success. In my personal life, I cope with change poorly at times (according to my wife). But I create change, and I do it well because I have a high sense of urgency.

To comment, go to www.cio.com/article/129253.



Richard Smotherman, CISSP

400 Executive Plaza
Farmingdale, NY 11735
516-224-1111
rsm@smotherman.com

Relax.

You just hired an (ISC)² infosecurity pro who's not only going to make your day, but your career.

It's easy to kick back when you've got the world's best information security employees at your command. (ISC)² credentials are the Gold Standard of the industry. When you see (ISC)² or our globally recognized certifications on a resume, you can be sure that you're getting a professional who continually updates his knowledge to keep ahead of new threats to your organization and most importantly has solutions! So you man the desk, we'll get the job done.

For more information on (ISC)²'s credential and educational offerings, please visit www.isc2.org/certify.



We're secure. We're compliant.
Now we're busting out the

SHURIMDYAE

(Security **H**elps **U**s **R**ake **I**n **M**ore **D**ollars, **Y**en **A**nd **E**uros)

Congratulations. Your IT security is working hard. But there's something more it should do (besides the protection, compliance, access, etc.). IT security should actually make your business more efficient. More flexible. More competitive. CA can help. Our Security Management centralizes your identity and access management to turn IT security into a proactive, business-building tool. So your security strengthens customer relationships, grows partnerships and helps your enterprise address changing markets with ninja-like agility. All with CA's best-in-class modularity, scalability and integration. But don't just take our acronym for it. Download the white paper, "Security Management: Aligning Security with Business Opportunities," at ca.com/secure.